SEQUENCE LISTING

<110> Wright, Susan C.
Larrick, James W.
Nock, Steffen R.
Wilson, David S.

<120> Cell-Killing Molecules and Methods of Use Thereof

<130> ABSALUS-08602

<160> 81

<170> PatentIn version 3.2

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<212> PRT
<213> Sus scrofa

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Ser Leu Leu Leu Lys Asn Ser Pro Leu Val Ser Arg Leu Thr Leu Tyr
20 25 30

Asp Ile Ala His Thr Pro Gly Val Ala Ala Asp Leu Ser His Ile Glu
35 40 45

Thr Arg Ala Thr Val Lys Gly Tyr Leu Gly Pro Glu Gln Leu Pro Asp
50 55 60

Cys Leu Lys Gly Cys Asp Val Val Val Ile Pro Ala Gly Val Pro Arg
65 70 75 80

Lys Pro Gly Met Thr Arg Asp Asp Leu Phe Asn Thr Asn Ala Thr Ile
85 90 95

Val Ala Thr Leu Thr Ala Ala Cys Ala Gln His Cys Pro Asp Ala Met
100 105 110

Ile Cys Ile Ile Ser Asn Pro Val Asn Ser Thr Ile Pro Ile Thr Ala
115 120 125

Glu Val Phe Lys Lys His Gly Val Tyr Asn Pro Asn Lys Ile Phe Gly
130 135 140

Val Thr Thr Leu Asp Ile Val Arg Ala Asn Ala Phe Val Ala Glu Leu
145 150 155 160

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Lys Gly Leu Asp Pro Ala Arg Val Ser Val Pro Val Ile Gly Gly His
                  165                 170                 175

Ala Gly Lys Thr Ile Ile Pro Leu Ile Ser Gln Cys Thr Pro Lys Val
            180                 185                 190

Asp Phe Pro Gln Asp Gln Leu Ser Thr Leu Thr Gly Arg Ile Gln Glu
        195                 200                 205

Ala Gly Thr Glu Val Val Lys Ala Lys Ala Gly Ala Gly Ser Ala Thr
    210                 215                 220

Leu Ser Met Ala Tyr Ala Gly Ala Arg Phe Val Phe Ser Leu Val Asp
225                 230                 235                 240

Ala Met Asn Gly Lys Glu Gly Val Val Glu Cys Ser Phe Val Lys Ser
                  245                 250                 255

Gln Glu Thr Asp Cys Pro Tyr Phe Ser Thr Pro Leu Leu Leu Gly Lys
            260                 265                 270

Lys Gly Ile Glu Lys Asn Leu Gly Ile Gly Lys Ile Ser Pro Phe Glu
        275                 280                 285

Glu Lys Met Ile Ala Glu Ala Ile Pro Glu Leu Lys Ala Ser Ile Lys
    290                 295                 300

Lys Gly Glu Glu Phe Val Lys Asn Met Lys
305                 310
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<210> 2
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Lys Ala Lys Ala Gly Ala Gly Ser Ala Thr Leu Ser Met Ala Tyr Ala
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Gly Ala Arg Phe Val Phe Ser Leu Val Asp Ala Met Asn Gly Lys Glu
            20                  25                  30

Gly Val Val Glu Cys Ser Phe Val Lys Ser Gln Glu Thr Asp Cys Pro
        35                  40                  45
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Tyr Phe Ser Thr Pro Leu Leu Leu Gly Lys Lys Gly Ile Glu Lys Asn
    50                  55                  60

Leu Gly Ile Gly Lys Ile Ser Pro
65                  70
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<210> 3
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<213> Sus scrofa

<400> 3

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Lys Ala Lys Ala Gly Ala Gly Ser Ala Thr Leu Ser Met Ala Tyr Ala
1               5                   10                  15

Gly Ala Arg Phe Val Phe Ser Leu Val Asp Ala Met Asn Gly Lys Glu
            20                  25                  30

Gly Val Val Glu Cys Ser Phe Val Lys Ser Gln Glu Thr Asp Cys Pro
        35                  40                  45

Tyr Phe Ser Thr Pro Leu Leu Leu Gly Lys Lys Gly Ile Glu Lys Asn
    50                  55                  60

Leu Gly Ile Gly Lys Ile Ser Pro Phe Glu Glu Lys Met Ile Ala Glu
65                  70                  75                  80

Ala Ile Pro Glu Leu Lys Ala Ser Ile Lys Lys Gly Glu Glu Phe Val
                85                  90                  95

Lys Asn Met Lys
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<210> 4
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<212> PRT
<213> Homo sapiens

<400> 4

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1               5                   10                  15

Phe Ser Thr Ser Ala Gln Asn Asn Ala Lys Val Ala Val Leu Gly Ala
            20                  25                  30

Ser Gly Gly Ile Gly Gln Pro Leu Ser Leu Leu Leu Lys Asn Ser Pro
        35                  40                  45
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Leu Val Ser Arg Leu Thr Leu Tyr Asp Ile Ala His Thr Pro Gly Val
50 55 60

Ala Ala Asp Leu Ser His Ile Glu Thr Lys Ala Ala Val Lys Gly Tyr
65 70 75 80

Leu Gly Pro Glu Gln Leu Pro Asp Cys Leu Lys Gly Cys Asp Val Val
85 90 95

Val Ile Pro Ala Gly Val Pro Arg Lys Pro Gly Met Thr Arg Asp Asp
100 105 110

Leu Phe Asn Thr Asn Ala Thr Ile Val Ala Thr Leu Thr Ala Ala Cys
115 120 125

Ala Gln His Cys Pro Glu Ala Met Ile Cys Val Ile Ala Asn Pro Val
130 135 140

Asn Ser Thr Ile Pro Ile Thr Ala Glu Val Phe Lys Lys His Gly Val
145 150 155 160

Tyr Asn Pro Asn Lys Ile Phe Gly Val Thr Thr Leu Asp Ile Val Arg
165 170 175

Ala Asn Thr Phe Val Ala Glu Leu Lys Gly Leu Asp Pro Ala Arg Val
180 185 190

Asn Val Pro Val Ile Gly Gly His Ala Gly Lys Thr Ile Ile Pro Leu
195 200 205

Ile Ser Gln Cys Thr Pro Lys Val Asp Phe Pro Gln Asp Gln Leu Thr
210 215 220

Ala Leu Thr Gly Arg Ile Gln Glu Ala Gly Thr Glu Val Val Lys Ala
225 230 235 240

Lys Ala Gly Ala Gly Ser Ala Thr Leu Ser Met Ala Tyr Ala Gly Ala
245 250 255

Arg Phe Val Phe Ser Leu Val Asp Ala Met Asn Gly Lys Glu Gly Val
260 265 270

Val Glu Cys Ser Phe Val Lys Ser Gln Glu Thr Glu Cys Thr Tyr Phe
275 280 285

Ser Thr Pro Leu Leu Leu Gly Lys Lys Gly Ile Glu Lys Asn Leu Gly
290 295 300

Ile Gly Lys Val Ser Ser Phe Glu Glu Lys Met Ile Ser Asp Ala Ile
305 310 315 320

Pro Glu Leu Lys Ala Ser Ile Lys Lys Gly Glu Asp Phe Val Lys Thr
325 330 335

Leu Lys

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gcccagaaca atgctaaagt agctgtgcta ggggcctctg gaggcatcgg gcagccactt 120

tcacttctcc tgaagaacag ccccttggtg agccgcctga ccctctatga tatcgcgcac 180

acacccggag tggccgcaga tctgagccac atcgagacca aagccgctgt gaaaggctac 240

ctcggacctg aacagctgcc tgactgcctg aaaggttgtg atgtggtagt tattccggct 300

ggagtcccca gaaagccagg catgacccgg gacgacctgt tcaacaccaa tgccacgatt 360

gtggccaccc tgaccgctgc ctgtgcccag cactgcccgg aagccatgat ctgcgtcatt 420

gccaatccgg ttaattccac catccccatc acagcagaag ttttcaagaa gcatggagtg 480

tacaacccca acaaaatctt cggcgtgacg accctggaca tcgtcagagc caacaccttt 540

gttgcagagc tgaagggttt ggatccagct cgagtcaacg tccctgtcat tggtggccat 600

gctgggaaga ccatcatccc cctgatctct cagtgcaccc ccaaggtgga ctttccccag 660

gaccagctga cagcactcac tgggcggatc caggaggccg gcacggaggt ggtcaaggct 720

aaagccggag caggctctgc caccctctcc atggcgtatg ccggcgcccg ctttgtcttc 780

tcccttgtgg atgcaatgaa tggaaaggaa ggtgttgtgg aatgttcctt cgttaagtca 840

caggaaacgg aatgtaccta cttctccaca ccgctgctgc ttgggaaaaa gggcatcgag 900

aagaacctgg gcatcggcaa agtctcctct tttgaggaga agatgatctc ggatgccatc 960

cccgagctga aggcctccat caagaagggg gaagatttcg tgaagaccct gaagtga 1017

<210> 6
<211> 72
<212> PRT
<213> Homo sapiens

<400> 6

Lys Ala Lys Ala Gly Ala Gly Ser Ala Thr Leu Ser Met Ala Tyr Ala
1 5 10 15

Gly Ala Arg Phe Val Phe Ser Leu Val Asp Ala Met Asn Gly Lys Glu
20 25 30

Gly Val Val Glu Cys Ser Phe Val Lys Ser Gln Glu Thr Glu Cys Thr
35 40 45

Tyr Phe Ser Thr Pro Leu Leu Leu Gly Lys Lys Gly Ile Glu Lys Asn
50 55 60

Leu Gly Ile Gly Lys Val Ser Ser
65 70

<210> 7
<211> 100
<212> PRT
<213> Homo sapiens

<400> 7

Lys Ala Lys Ala Gly Ala Gly Ser Ala Thr Leu Ser Met Ala Tyr Ala
1 5 10 15

Gly Ala Arg Phe Val Phe Ser Leu Val Asp Ala Met Asn Gly Lys Glu
20 25 30

Gly Val Val Glu Cys Ser Phe Val Lys Ser Gln Glu Thr Glu Cys Thr
35 40 45

Tyr Phe Ser Thr Pro Leu Leu Leu Gly Lys Lys Gly Ile Glu Lys Asn
50 55 60

Leu Gly Ile Gly Lys Val Ser Ser Phe Glu Glu Lys Met Ile Ser Asp
65 70 75 80

Ala Ile Pro Glu Leu Lys Ala Ser Ile Lys Lys Gly Glu Asp Phe Val
85 90 95

Lys Thr Leu Lys
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<210> 8
<211> 361
<212> PRT
<213> Homo sapiens

<400> 8

Met Ala Ala Pro Arg Ala Gly Arg Gly Ala Gly Trp Ser Leu Arg Ala
1 5 10 15

Trp Arg Ala Leu Gly Gly Ile Arg Trp Gly Arg Arg Pro Arg Leu Thr
20 25 30

Pro Asp Leu Arg Ala Leu Leu Thr Ser Gly Thr Ser Asp Pro Arg Ala
35 40 45

Arg Val Thr Tyr Gly Thr Pro Ser Leu Trp Ala Arg Leu Ser Val Gly
50 55 60

Val Thr Glu Pro Arg Ala Cys Leu Thr Ser Gly Thr Pro Gly Pro Arg
65 70 75 80

Ala Gln Leu Thr Ala Val Thr Pro Asp Thr Arg Thr Arg Glu Ala Ser
85 90 95

Glu Asn Ser Gly Thr Arg Ser Arg Ala Trp Leu Ala Val Ala Leu Gly
100 105 110

Ala Gly Gly Ala Val Leu Leu Leu Leu Trp Gly Gly Gly Arg Gly Pro
115 120 125

Pro Ala Val Leu Ala Ala Val Pro Ser Pro Pro Pro Ala Ser Pro Arg
130 135 140

Ser Gln Tyr Asn Phe Ile Ala Asp Val Val Glu Lys Thr Ala Pro Ala
145 150 155 160

Val Val Tyr Ile Glu Ile Leu Asp Arg His Pro Phe Leu Gly Arg Glu
165 170 175

Val Pro Ile Ser Asn Gly Ser Gly Phe Val Val Ala Ala Asp Gly Leu
180 185 190

Ile Val Thr Asn Ala His Val Val Ala Asp Arg Arg Arg Val Arg Val
195 200 205

Arg Leu Leu Ser Gly Asp Thr Tyr Glu Ala Val Val Thr Ala Val Asp
210 215 220

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Pro Val Ala Asp Ile Ala Thr Leu Arg Ile Gln Thr Lys Phe Gly Asn
225                 230                 235                 240

Ser Gly Gly Pro Leu Val Asn Leu Asp Gly Glu Val Ile Gly Val Asn
                245                 250                 255

Thr Met Lys Val Thr Ala Gly Ile Ser Phe Ala Ile Pro Ser Asp Arg
            260                 265                 270

Leu Arg Glu Phe Leu His Arg Gly Glu Lys Lys Asn Ser Ser Ser Gly
        275                 280                 285

Ile Ser Gly Ser Gln Arg Arg Tyr Ile Gly Val Met Met Leu Thr Leu
    290                 295                 300

Ser Pro Arg Ala Gly Leu Arg Pro Gly Asp Val Ile Leu Ala Ile Gly
305                 310                 315                 320

Glu Gln Met Val Gln Asn Ala Glu Asp Val Tyr Glu Ala Val Arg Thr
                325                 330                 335

Gln Ser Gln Leu Ala Val Gln Ile Arg Arg Gly Arg Glu Thr Leu Thr
            340                 345                 350

Leu Tyr Val Thr Pro Glu Val Thr Glu
        355                 360
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<211> 1086
<212> DNA
<213> Homo sapiens

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tcaggaactt ctgacccccg ggcccgagtg acttatggga cccccagtct ctgggcccgg 180

ttgtctgttg gggtcactga accccgagca tgcctgacgt ctgggacccc gggtccccgg 240

gcacaactga ctgcggtgac cccagatacc aggacccggg aggcctcaga gaactctgga 300

acccgttcgc gcgcgtggct ggcggtggcg ctgggcgctg gggggcagt gctgttgttg 360

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gcttctcccc ggagtcagta caacttcatc gcagatgtgg tggagaagac agcacctgcc 480

gtggtctata tcgagatcct ggaccggcac cctttcttgg gccgcgaggt ccctatctcg 540

aacggctcag gattcgtggt ggctgccgat gggctcattg tcaccaacgc ccatgtggtg 600

gctgatcggc gcagagtccg tgtgagactg ctaagcggcg acacgtatga ggccgtggtc 660

acagctgtgg atcccgtggc agacatcgca acgctgagga ttcagactaa gtttggaaac 720

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acagctggaa tctcctttgc catcccttct gatcgtcttc gagagtttct gcatcgtggg 840

gaaaagaaga attcctcctc cggaatcagt gggtcccagc ggcgctacat tggggtgatg 900

atgctgaccc tgagtcccag ggctggtctg cggcctggtg atgtgatttt ggccattggg 960

gagcagatgg tacaaaatgc tgaagatgtt tatgaagctg ttcgaaccca atcccagttg 1020

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<210> 10
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<212> PRT
<213> Homo sapiens

<400> 10

Met Phe Arg Cys Gly Gly Leu Ala Ala Gly Ala Leu Lys Gln Lys Leu
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Val Pro Leu Val Arg Thr Val Cys Val Arg Ser Pro Arg Gln Arg Asn
20 25 30

Arg Leu Pro Gly Asn Leu Phe Gln Arg Trp His Val Pro Leu Glu Leu
35 40 45

Gln Met Thr Arg Gln Met Ala Ser Ser Gly Ala Ser Gly Gly Lys Ile
50 55 60

Asp Asn Ser Val Leu Val Leu Ile Val Gly Leu Ser Thr Val Gly Ala
65 70 75 80

Gly Ala Tyr Ala Tyr Lys Thr Met Lys Glu Asp Glu Lys Arg Tyr Asn
85 90 95

Glu Arg Ile Ser Gly Leu Gly Leu Thr Pro Glu Gln Lys Gln Lys Lys
100 105 110

Ala Ala Leu Ser Ala Ser Glu Gly Glu Glu Val Pro Gln Asp Lys Ala
115 120 125

Pro Ser His Val Pro Phe Leu Leu Ile Gly Gly Gly Thr Ala Ala Phe
130 135 140

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Ala Ala Ala Arg Ser Ile Arg Ala Arg Asp Pro Gly Ala Arg Val Leu
145                 150                 155                 160

Ile Val Ser Glu Asp Pro Glu Leu Pro Tyr Met Arg Pro Pro Leu Ser
                165                 170                 175

Lys Glu Leu Trp Phe Ser Asp Asp Pro Asn Val Thr Lys Thr Leu Arg
            180                 185                 190

Phe Lys Gln Trp Asn Gly Lys Glu Arg Ser Ile Tyr Phe Gln Pro Pro
        195                 200                 205

Ser Phe Tyr Val Ser Ala Gln Asp Leu Pro His Ile Glu Asn Gly Gly
    210                 215                 220

Val Ala Val Leu Thr Gly Lys Lys Val Val Gln Leu Asp Val Arg Asp
225                 230                 235                 240

Asn Met Val Lys Leu Asn Asp Gly Ser Gln Ile Thr Tyr Glu Lys Cys
                245                 250                 255

Leu Ile Ala Thr Gly Gly Thr Pro Arg Ser Leu Ser Ala Ile Asp Arg
            260                 265                 270

Ala Gly Ala Glu Val Lys Ser Arg Thr Thr Leu Phe Arg Lys Ile Gly
        275                 280                 285

Asp Phe Arg Ser Leu Glu Lys Ile Ser Arg Glu Val Lys Ser Ile Thr
    290                 295                 300

Ile Ile Gly Gly Gly Phe Leu Gly Ser Glu Leu Ala Cys Ala Leu Gly
305                 310                 315                 320

Arg Lys Ala Arg Ala Leu Gly Thr Glu Val Ile Gln Leu Phe Pro Glu
                325                 330                 335

Lys Gly Asn Met Gly Lys Ile Leu Pro Glu Tyr Leu Ser Asn Trp Thr
            340                 345                 350

Met Glu Lys Val Arg Arg Glu Gly Val Lys Val Met Pro Asn Ala Ile
        355                 360                 365

Val Gln Ser Val Gly Val Ser Ser Gly Lys Leu Leu Ile Lys Leu Lys
    370                 375                 380

Asp Gly Arg Lys Val Glu Thr Asp His Ile Val Ala Ala Val Gly Leu
385                 390                 395                 400
```

Glu Pro Asn Val Glu Leu Ala Lys Thr Gly Gly Leu Glu Ile Asp Ser
405 410 415

Asp Phe Gly Gly Phe Arg Val Asn Ala Glu Leu Gln Ala Arg Ser Asn
420 425 430

Ile Trp Val Ala Gly Asp Ala Ala Cys Phe Tyr Asp Ile Lys Leu Gly
435 440 445

Arg Arg Arg Val Glu His His Asp His Ala Val Val Ser Gly Arg Leu
450 455 460

Ala Gly Glu Asn Met Thr Gly Ala Ala Lys Pro Tyr Trp His Gln Ser
465 470 475 480

Met Phe Trp Ser Asp Leu Gly Pro Asp Val Gly Tyr Glu Ala Ile Gly
485 490 495

Leu Val Asp Ser Ser Leu Pro Thr Val Gly Val Phe Ala Lys Ala Thr
500 505 510

Ala Gln Asp Asn Pro Lys Ser Ala Thr Glu Gln Ser Gly Thr Gly Ile
515 520 525

Arg Ser Glu Ser Glu Thr Glu Ser Glu Ala Ser Glu Ile Thr Ile Pro
530 535 540

Pro Ser Thr Pro Ala Val Pro Gln Ala Pro Val Gln Gly Glu Asp Tyr
545 550 555 560

Gly Lys Gly Val Ile Phe Tyr Leu Arg Asp Lys Val Val Val Gly Ile
565 570 575

Val Leu Trp Asn Ile Phe Asn Arg Met Pro Ile Ala Arg Lys Ile Ile
580 585 590

Lys Asp Gly Glu Gln His Glu Asp Leu Asn Glu Val Ala Lys Leu Phe
595 600 605

Asn Ile His Glu Asp
610

<210> 11
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<212> DNA
<213> Homo sapiens

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cgatggcatg ttcctctaga actccagatg acaagacaaa tggctagctc tggtgcatca 180

gggggcaaaa tcgataattc tgtgttagtc cttattgtgg gcttatcaac agtaggagct 240

ggtgcctatg cctacaagac tatgaaagag gacgaaaaaa gatacaatga aagaatttca 300

gggttagggc tgacaccaga acagaaacag aaaaaggccg cgttatctgc ttcagaagga 360

gaggaagttc ctcaagacaa ggcgccaagt catgttcctt tcctgctaat tggtggaggc 420

acagctgctt ttgctgcagc cagatccatc cgggctcggg atcctggggc cagggtactg 480

attgtatctg aagatcctga gctgccgtac atgcgacctc ctctttcaaa agaactgtgg 540

ttttcagatg acccaaatgt cacaaagaca ctgcgattca aacagtggaa tggaaaagag 600

agaagcatat atttccagcc accttctttc tatgtctctg ctcaggacct gcctcatatt 660

gagaatggtg gtgtggctgt cctcactggg aagaaggtag tacagctgga tgtgagagac 720

aacatggtga aacttaatga tggctctcaa ataacctatg aaaagtgctt gattgcaaca 780

ggaggtactc caagaagtct gtctgccatt gatagggctg gagcagaggt gaagagtaga 840

acaacgcttt tcagaaagat tggagacttt agaagcttgg agaagatttc acgggaagtc 900

aaatcaatta cgattatcgg tgggggcttc cttggtagcg aactggcctg tgctcttggc 960

agaaaggctc gagccttggg cacagaagtg attcaactct tccccgagaa aggaaatatg 1020

ggaaagatcc tccccgaata cctcagcaac tggaccatgg aaaaagtcag acgagagggg 1080

gttaaggtga tgcccaatgc tattgtgcaa tccgttggag tcagcagtgg caagttactt 1140

atcaagctga aagacggcag gaaggtagaa actgaccaca tagtggcagc tgtgggcctg 1200

gagcccaatg ttgagttggc caagactggt ggcctggaaa tagactcaga ttttggtggc 1260

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atgttctgga gtgatttggg ccccgatgtt ggctatgaag ctattggtct tgtggacagt 1500

agtttgccca cagttggtgt ttttgcaaaa gcaactgcac aagacaaccc caaatctgcc 1560

acagagcagt caggaactgg tatccgatca gagagtgaga cagagtccga ggcctcagaa 1620

attactattc ctcccagcac cccggcagtt ccacaggctc ccgtccaggg ggaggactac 1680

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ctcaatgaag tagccaaact attcaacatt catgaagact ga 1842

<210> 12
<211> 186
<212> PRT
<213> Homo sapiens

<400> 12

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Ser Glu Ala Leu Met Arg Arg Ala Val Ser Leu Val Thr Asp Ser Thr
20 25 30

Ser Thr Phe Leu Ser Gln Thr Thr Tyr Ala Leu Ile Glu Ala Ile Thr
35 40 45

Glu Tyr Thr Lys Ala Val Tyr Thr Leu Thr Ser Leu Tyr Arg Gln Tyr
50 55 60

Thr Ser Leu Leu Gly Lys Met Asn Ser Glu Glu Glu Asp Glu Val Trp
65 70 75 80

Gln Val Ile Ile Gly Ala Arg Ala Glu Met Thr Ser Lys His Gln Glu
85 90 95

Tyr Leu Lys Leu Glu Thr Thr Trp Met Thr Ala Val Gly Leu Ser Glu
100 105 110

Met Ala Ala Glu Ala Ala Tyr Gln Thr Gly Ala Asp Gln Ala Ser Ile
115 120 125

Thr Ala Arg Asn His Ile Gln Leu Val Lys Leu Gln Val Glu Glu Val
130 135 140

His Gln Leu Ser Arg Lys Ala Glu Thr Lys Leu Ala Glu Ala Gln Ile
145 150 155 160

Glu Glu Leu Arg Gln Lys Thr Gln Glu Glu Gly Glu Glu Arg Ala Glu
165 170 175

Ser Glu Gln Glu Ala Tyr Leu Arg Glu Asp
180 185

<210> 13
<211> 561
<212> DNA
<213> Homo sapiens

<400> 13
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tatgcgttga ttgaagctat tactgaatat actaaggctg tttatacctt aacttctctt 180

taccgacaat atacaagttt acttgggaaa atgaattcag aggaggaaga tgaagtgtgg 240

caggtgatca taggagccag agctgagatg acttcaaaac accaagagta cttgaagctg 300

gaaaccactt ggatgactgc agttggtctt tcagagatgg cagcagaagc tgcatatcaa 360

actggcgcag atcaggcctc tataaccgcc aggaatcaca ttcagctggt gaaactgcag 420

gtggaagagg tgcaccagct ctcccggaaa gcagaaacca agctggcaga agcacagata 480

gaagagctcc gtcagaaaac acaggaggaa ggggaggagc gggctgagtc ggagcaggag 540

gcctacctgc gtgaggattg a 561

<210> 14
<211> 782
<212> PRT
<213> Homo sapiens

<400> 14

Met Ala Pro His Arg Pro Ala Pro Ala Leu Leu Cys Ala Leu Ser Leu
1 5 10 15

Ala Leu Cys Ala Leu Ser Leu Pro Val Arg Ala Ala Thr Ala Ser Arg
20 25 30

Gly Ala Ser Gln Ala Gly Ala Pro Gln Gly Arg Val Pro Glu Ala Arg
35 40 45

Pro Asn Ser Met Val Val Glu His Pro Glu Phe Leu Lys Ala Gly Lys
50 55 60

Glu Pro Gly Leu Gln Ile Trp Arg Val Glu Lys Phe Asp Leu Val Pro
65 70 75 80

Val Pro Thr Asn Leu Tyr Gly Asp Phe Phe Thr Gly Asp Ala Tyr Val
85 90 95

Ile Leu Lys Thr Val Gln Leu Arg Asn Gly Asn Leu Gln Tyr Asp Leu
100 105 110

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His Tyr Trp Leu Gly Asn Glu Cys Ser Gln Asp Glu Ser Gly Ala Ala
        115                 120                 125

Ala Ile Phe Thr Val Gln Leu Asp Asp Tyr Leu Asn Gly Arg Ala Val
    130                 135                 140

Gln His Arg Glu Val Gln Gly Phe Glu Ser Ala Thr Phe Leu Gly Tyr
145                 150                 155                 160

Phe Lys Ser Gly Leu Lys Tyr Lys Lys Gly Gly Val Ala Ser Gly Phe
                165                 170                 175

Lys His Val Val Pro Asn Glu Val Val Val Gln Arg Leu Phe Gln Val
            180                 185                 190

Lys Gly Arg Arg Val Val Arg Ala Thr Glu Val Pro Val Ser Trp Glu
        195                 200                 205

Ser Phe Asn Asn Gly Asp Cys Phe Ile Leu Asp Leu Gly Asn Asn Ile
    210                 215                 220

His Gln Trp Cys Gly Ser Asn Ser Asn Arg Tyr Glu Arg Leu Lys Ala
225                 230                 235                 240

Thr Gln Val Ser Lys Gly Ile Arg Asp Asn Glu Arg Ser Gly Arg Ala
                245                 250                 255

Arg Val His Val Ser Glu Glu Gly Thr Glu Pro Glu Ala Met Leu Gln
            260                 265                 270

Val Leu Gly Pro Lys Pro Ala Leu Pro Ala Gly Thr Glu Asp Thr Ala
        275                 280                 285

Lys Glu Asp Ala Ala Asn Arg Lys Leu Ala Lys Leu Tyr Lys Val Ser
    290                 295                 300

Asn Gly Ala Gly Thr Met Ser Val Ser Leu Val Ala Asp Glu Asn Pro
305                 310                 315                 320

Phe Ala Gln Gly Ala Leu Lys Ser Glu Asp Cys Phe Ile Leu Asp His
                325                 330                 335

Gly Lys Asp Gly Lys Ile Phe Val Trp Lys Gly Lys Gln Ala Asn Thr
            340                 345                 350

Glu Glu Arg Lys Ala Ala Leu Lys Thr Ala Ser Asp Phe Ile Thr Lys
        355                 360                 365
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Met Asp Tyr Pro Lys Gln Thr Gln Val Ser Val Leu Pro Glu Gly Gly
    370                 375                 380

Glu Thr Pro Leu Phe Lys Gln Phe Phe Lys Asn Trp Arg Asp Pro Asp
385                 390                 395                 400

Gln Thr Asp Gly Leu Gly Leu Ser Tyr Leu Ser Ser His Ile Ala Asn
                405                 410                 415

Val Glu Arg Val Pro Phe Asp Ala Ala Thr Leu His Thr Ser Thr Ala
            420                 425                 430

Met Ala Ala Gln His Gly Met Asp Asp Asp Gly Thr Gly Gln Lys Gln
        435                 440                 445

Ile Trp Arg Ile Glu Gly Ser Asn Lys Val Pro Val Asp Pro Ala Thr
    450                 455                 460

Tyr Gly Gln Phe Tyr Gly Gly Asp Ser Tyr Ile Ile Leu Tyr Asn Tyr
465                 470                 475                 480

Arg His Gly Gly Arg Gln Gly Gln Ile Ile Tyr Asn Trp Gln Gly Ala
                485                 490                 495

Gln Ser Thr Gln Asp Glu Val Ala Ala Ser Ala Ile Leu Thr Ala Gln
            500                 505                 510

Leu Asp Glu Glu Leu Gly Gly Thr Pro Val Gln Ser Arg Val Val Gln
        515                 520                 525

Gly Lys Glu Pro Ala His Leu Met Ser Leu Phe Gly Gly Lys Pro Met
    530                 535                 540

Ile Ile Tyr Lys Gly Gly Thr Ser Arg Glu Gly Gly Gln Thr Ala Pro
545                 550                 555                 560

Ala Ser Thr Arg Leu Phe Gln Val Arg Ala Asn Ser Ala Gly Ala Thr
                565                 570                 575

Arg Ala Val Glu Val Leu Pro Lys Ala Gly Ala Leu Asn Ser Asn Asp
            580                 585                 590

Ala Phe Val Leu Lys Thr Pro Ser Ala Ala Tyr Leu Trp Val Gly Thr
        595                 600                 605
```

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Gly Ala Ser Glu Ala Glu Lys Thr Gly Ala Gln Glu Leu Leu Arg Val
    610                 615                 620

Leu Arg Ala Gln Pro Val Gln Val Ala Glu Gly Ser Glu Pro Asp Gly
625                 630                 635                 640

Phe Trp Glu Ala Leu Gly Gly Lys Ala Ala Tyr Arg Thr Ser Pro Arg
                645                 650                 655

Leu Lys Asp Lys Lys Met Asp Ala His Pro Pro Arg Leu Phe Ala Cys
            660                 665                 670

Ser Asn Lys Ile Gly Arg Phe Val Ile Glu Glu Val Pro Gly Glu Leu
        675                 680                 685

Met Gln Glu Asp Leu Ala Thr Asp Asp Val Met Leu Leu Asp Thr Trp
    690                 695                 700

Asp Gln Val Phe Val Trp Val Gly Lys Asp Ser Gln Glu Glu Glu Lys
705                 710                 715                 720

Thr Glu Ala Leu Thr Ser Ala Lys Arg Tyr Ile Glu Thr Asp Pro Ala
                725                 730                 735

Asn Arg Asp Arg Arg Thr Pro Ile Thr Val Val Lys Gln Gly Phe Glu
            740                 745                 750

Pro Pro Ser Phe Val Gly Trp Phe Leu Gly Trp Asp Asp Asp Tyr Trp
        755                 760                 765

Ser Val Asp Pro Leu Asp Arg Ala Met Ala Glu Leu Ala Ala
    770                 775                 780
```

<210> 15
<211> 2349
<212> DNA
<213> Homo sapiens

<400> 15
atggctccgc accgccccgc gcccgcgctg ctttgcgcgc tgtccctggc gctgtgcgcg 60

ctgtcgctgc ccgtccgcgc ggccactgcg tcgcgggggg cgtcccaggc gggggcgccc 120

caggggcggg tgcccgaggc gcggcccaac agcatggtgg tggaacaccc cgagttcctc 180

aaggcaggga aggagcctgg cctgcagatc tggcgtgtgg agaagttcga tctggtgccc 240

gtgcccacca acctttatgg agacttcttc acgggcgacg cctacgtcat cctgaagaca 300

gtgcagctga ggaacggaaa tctgcagtat gacctccact actggctggg caatgagtgc 360

agccaggatg agagcggggc ggccgccatc tttaccgtgc agctggatga ctacctgaac 420

ggccgggccg tgcagcaccg tgaggtccag ggcttcgagt cggccacctt cctaggctac 480

ttcaagtctg gcctgaagta caagaaagga ggtgtggcat caggattcaa gcacgtggta 540

cccaacgagg tggtggtgca gagactcttc caggtcaaag ggcggcgtgt ggtccgtgcc 600

accgaggtac ctgtgtcctg ggagagcttc aacaatggcg actgcttcat cctggacctg 660

ggcaacaaca tccaccagtg gtgtggttcc aacagcaatc ggtatgaaag actgaaggcc 720

acacaggtgt ccaagggcat ccgggacaac gagcggagtg gccgggcccg agtgcacgtg 780

tctgaggagg gcactgagcc cgaggcgatg ctccaggtgc tgggccccaa gccggctctg 840

cctgcaggta ccgaggacac cgccaaggag gatgcggcca accgcaagct ggccaagctc 900

tacaaggtct ccaatggtgc agggaccatg tccgtctccc tcgtggctga tgagaacccc 960

ttcgcccagg gggccctgaa gtcagaggac tgcttcatcc tggaccacgg caaagatggg 1020

aaaatctttg tctggaaagg caagcaggca aacacggagg agaggaaggc tgccctcaaa 1080

acagcctctg acttcatcac caagatggac taccccaagc agactcaggt ctcggtcctt 1140

cctgagggcg gtgagacccc actgttcaag cagttcttca agaactggcg ggacccagac 1200

cagacagatg gcctgggctt gtcctacctt tccagccata tcgccaacgt ggagcgggtg 1260

cccttcgacg ccgccaccct gcacacctcc actgccatgg ccgcccagca cggcatggat 1320

gacgatggca caggccagaa acagatctgg agaatcgaag gttccaacaa ggtgcccgtg 1380

gaccctgcca catatggaca gttctatgga ggcgacagct acatcattct gtacaactac 1440

cgccatggtg gccgccaggg gcagataatc tataactggc agggtgccca gtctacccag 1500

gatgaggtcg ctgcatctgc catcctgact gctcagctgg atgaggagct gggaggtacc 1560

cctgtccaga gccgtgtggt ccaaggcaag gagcccgccc acctcatgag cctgtttggt 1620

gggaagccca tgatcatcta caagggcggc acctcccgcg agggcgggca gacagcccct 1680

gccagcaccc gcctcttcca ggtccgcgcc aacagcgctg gagccacccg ggctgttgag 1740

gtattgccta aggctggtgc actgaactcc aacgatgcct ttgttctgaa aacccctca 1800

gccgcctacc tgtgggtggg tacaggagcc agcgaggcag agaagacggg ggcccaggag 1860

ctgctcaggg tgctgcgggc ccaacctgtg caggtggcag aaggcagcga gccagatggc 1920

ttctgggagg ccctgggcgg gaaggctgcc taccgcacat ccccacggct gaaggacaag 1980

aagatggatg cccatcctcc tcgcctcttt gcctgctcca acaagattgg acgttttgtg 2040

atcgaagagg ttcctggtga gctcatgcag gaagacctgg caacggatga cgtcatgctt 2100

ctggacacct gggaccaggt ctttgtctgg gttggaaagg attctcaaga agaagaaaag 2160

acagaagcct tgacttctgc taagcggtac atcgagacgg acccagccaa tcgggatcgg 2220

cggacgccca tcaccgtggt gaagcaaggc tttgagcctc cctcctttgt gggctggttc 2280

cttggctggg atgatgatta ctggtctgtg gacccccttgg acagggccat ggctgagctg 2340

gctgcctga 2349

<210> 16
<211> 239
<212> PRT
<213> Homo sapiens

<400> 16

Met Ala His Ala Gly Arg Thr Gly Tyr Asp Asn Arg Glu Ile Val Met
1 5 10 15

Lys Tyr Ile His Tyr Lys Leu Ser Gln Arg Gly Tyr Glu Trp Asp Ala
20 25 30

Gly Asp Val Gly Ala Ala Pro Pro Gly Ala Ala Pro Ala Pro Gly Ile
35 40 45

Phe Ser Ser Gln Pro Gly His Thr Pro His Thr Ala Ala Ser Arg Asp
50 55 60

Pro Val Ala Arg Thr Ser Pro Leu Gln Thr Pro Ala Ala Pro Gly Ala
65 70 75 80

Ala Ala Gly Pro Ala Leu Ser Pro Val Pro Pro Val Val His Leu Thr
85 90 95

Leu Arg Gln Ala Gly Asp Asp Phe Ser Arg Arg Tyr Arg Arg Asp Phe
100 105 110

Ala Glu Met Ser Arg Gln Leu His Leu Thr Pro Phe Thr Ala Arg Gly
115 120 125

Arg Phe Ala Thr Val Val Glu Glu Leu Phe Arg Asp Gly Val Asn Trp
130 135 140

Gly Arg Ile Val Ala Phe Phe Glu Phe Gly Gly Val Met Cys Val Glu
145 150 155 160

Ser Val Asn Arg Glu Met Ser Pro Leu Val Asp Asn Ile Ala Leu Trp
165 170 175

Met Thr Glu Tyr Leu Asn Arg His Leu His Thr Trp Ile Gln Asp Asn
180 185 190

Gly Gly Trp Asp Ala Phe Val Glu Leu Tyr Gly Pro Ser Met Arg Pro
195 200 205

Leu Phe Asp Phe Ser Trp Leu Ser Leu Lys Thr Leu Leu Ser Leu Ala
210 215 220

Leu Val Gly Ala Cys Ile Thr Leu Gly Ala Tyr Leu Gly His Lys
225 230 235

<210> 17
<211> 720
<212> DNA
<213> Homo sapiens

<400> 17
atggcgcacg ctgggagaac agggtacgat aaccgggaga tagtgatgaa gtacatccat 60

tataagctgt cgcagagggg ctacgagtgg gatgcgggag atgtgggcgc cgcgcccccg 120

ggggccgccc ccgcgccggg catcttctcc tcgcagcccg ggcacacgcc ccatacagcc 180

gcatcccggg acccggtcgc caggacctcg ccgctgcaga ccccggctgc ccccggcgcc 240

gccgcggggc ctgcgctcag cccggtgcca cctgtggtcc acctgaccct ccgccaggcc 300

ggcgacgact tctcccgccg ctaccgccgc gacttcgccg agatgtccag gcagctgcac 360

ctgacgccct tcaccgcgcg gggacgcttt gccacggtgg tggaggagct cttcagggac 420

ggggtgaact gggggaggat tgtggccttc tttgagttcg gtggggtcat gtgtgtggag 480

agcgtcaacc gggagatgtc gcccctggtg gacaacatcg ccctgtggat gactgagtac 540

ctgaaccggc acctgcacac ctggatccag gataacggag gctgggatgc ctttgtggaa 600

ctgtacggcc ccagcatgcg gcctctgttt gatttctcct ggctgtctct gaagactctg 660

ctcagtttgg ccctggtggg agcttgcatc accctgggtg cctatctggg ccacaagtga 720

<210> 18
<211> 164
<212> PRT
<213> Homo sapiens

<400> 18

Met Asp Gly Ser Gly Glu Gln Pro Arg Gly Gly Gly Pro Thr Ser Ser
1 5 10 15

Glu Gln Ile Met Lys Thr Gly Ala Leu Leu Leu Gln Gly Phe Ile Gln
20 25 30

Asp Arg Ala Gly Arg Met Gly Gly Glu Ala Pro Glu Leu Ala Leu Asp
35 40 45

Pro Val Pro Gln Asp Ala Ser Thr Lys Lys Leu Ser Glu Cys Leu Lys
50 55 60

Arg Ile Gly Asp Glu Leu Asp Ser Asn Met Glu Leu Gln Arg Met Ile
65 70 75 80

Ala Ala Val Asp Thr Asp Ser Pro Arg Glu Val Phe Phe Arg Val Ala
85 90 95

Ala Asp Met Phe Ser Asp Gly Asn Phe Asn Trp Gly Arg Val Val Ala
100 105 110

Leu Phe Tyr Phe Ala Ser Lys Leu Val Leu Lys Ala Gly Val Lys Trp
115 120 125

Arg Asp Leu Gly Ser Leu Gln Pro Leu Pro Pro Gly Phe Lys Arg Phe
130 135 140

Thr Cys Leu Ser Ile Pro Arg Ser Trp Asp Tyr Arg Pro Cys Ala Pro
145 150 155 160

Arg Cys Arg Asn

<210> 19
<211> 495
<212> DNA
<213> Homo sapiens

<400> 19
atggacgggt ccggggagca gcccagaggc ggggggccca ccagctctga gcagatcatg 60

aagacagggg ccctttttgct tcagggtttc atccaggatc gagcagggcg aatgggggggg 120

gaggcacccg agctggccct ggacccggtg cctcaggatg cgtccaccaa gaagctgagc 180

gagtgtctca agcgcatcgg ggacgaactg gacagtaaca tggagctgca gaggatgatt 240

gccgccgtgg acacagactc cccccgagag gtctttttcc gagtggcagc tgacatgttt 300

tctgacggca acttcaactg gggccgggtt gtcgcccttt tctactttgc cagcaaactg 360

gtgctcaagg ctggcgtgaa atggcgtgat ctgggctcac tgcaacctct gcctcctggg 420

ttcaagcgat tcacctgcct cagcatccca aggagctggg attacaggcc ctgtgcacca 480

aggtgccgga actga 495

<210> 20
<211> 168
<212> PRT
<213> Homo sapiens

<400> 20

Met Phe Gln Ile Pro Glu Phe Glu Pro Ser Glu Gln Glu Asp Ser Ser
1 5 10 15

Ser Ala Glu Arg Gly Leu Gly Pro Ser Pro Ala Gly Asp Gly Pro Ser
20 25 30

Gly Ser Gly Lys His His Arg Gln Ala Pro Gly Leu Leu Trp Asp Ala
35 40 45

Ser His Gln Gln Glu Gln Pro Thr Ser Ser Ser His His Gly Gly Ala
50 55 60

Gly Ala Val Glu Ile Arg Ser Arg His Ser Ser Tyr Pro Ala Gly Thr
65 70 75 80

Glu Asp Asp Glu Gly Met Gly Glu Glu Pro Ser Pro Phe Arg Gly Arg
85 90 95

Ser Arg Ser Ala Pro Pro Asn Leu Trp Ala Ala Gln Arg Tyr Gly Arg
100 105 110

Glu Leu Arg Arg Met Ser Asp Glu Phe Val Asp Ser Phe Lys Lys Gly
115 120 125

Leu Pro Arg Pro Lys Ser Ala Gly Thr Ala Thr Gln Met Arg Gln Ser
130 135 140

Ser Ser Trp Thr Arg Val Phe Gln Ser Trp Trp Asp Arg Asn Leu Gly
145 150 155 160

Arg Gly Ser Ser Ala Pro Ser Gln
165

<210> 21
<211> 507
<212> DNA
<213> Homo sapiens

<400> 21
atgttccaga tcccagagtt tgagccgagt gagcaggaag actccagctc tgcagagagg 60

ggcctgggcc ccagccccgc aggggacggg ccctcaggct ccggcaagca tcatcgccag 120

gccccaggcc tcctgtggga cgccagtcac cagcaggagc agccaaccag cagcagccat 180

catggaggcg ctggggctgt ggagatccgg agtcgccaca gctcctaccc cgcggggacg 240

gaggacgacg aagggatggg ggaggagccc agccccttтc ggggccgctc gcgctcggcg 300

ccccccaacc tctgggcagc acagcgctat ggccgcgagc tccggaggat gagtgacgag 360

tttgtggact cctttaagaa gggacttcct cgcccgaaga gcgcgggcac agcaacgcag 420

atgcggcaaa gctccagctg gacgcgagtc ttccagtcct ggtgggatcg gaacttgggc 480

aggggaagct ccgccccctc ccagtga 507

<210> 22
<211> 241
<212> PRT
<213> Homo sapiens

<400> 22

Met Cys Ser Gly Ala Gly Val Met Met Ala Arg Trp Ala Ala Arg Gly
1 5 10 15

Arg Ala Gly Trp Arg Ser Thr Val Arg Ile Leu Ser Pro Leu Gly His
20 25 30

Cys Glu Pro Gly Val Ser Arg Ser Cys Arg Ala Ala Gln Ala Met Asp
35 40 45

Cys Glu Val Asn Asn Gly Ser Ser Leu Arg Asp Glu Cys Ile Thr Asn
50 55 60

Leu Leu Val Phe Gly Phe Leu Gln Ser Cys Ser Asp Asn Ser Phe Arg
65 70 75 80

Arg Glu Leu Asp Ala Leu Gly His Glu Leu Pro Val Leu Ala Pro Gln
85 90 95

Trp Glu Gly Tyr Asp Glu Leu Gln Thr Asp Gly Asn Arg Ser Ser His
100 105 110

Ser Arg Leu Gly Arg Ile Glu Ala Asp Ser Glu Ser Gln Glu Asp Ile
115 120 125

Ile Arg Asn Ile Ala Arg His Leu Ala Gln Val Gly Asp Ser Met Asp
130 135 140

Arg Ser Ile Pro Pro Gly Leu Val Asn Gly Leu Ala Leu Gln Leu Arg
145 150 155 160

Asn Thr Ser Arg Ser Glu Glu Asp Arg Asn Arg Asp Leu Ala Thr Ala
165 170 175

Leu Glu Gln Leu Leu Gln Ala Tyr Pro Arg Asp Met Glu Lys Glu Lys
180 185 190

Thr Met Leu Val Leu Ala Leu Leu Leu Ala Lys Lys Val Ala Ser His
195 200 205

Thr Pro Ser Leu Leu Arg Asp Val Phe His Thr Thr Val Asn Phe Ile
210 215 220

Asn Gln Asn Leu Arg Thr Tyr Val Arg Ser Leu Ala Arg Asn Gly Met
225 230 235 240

Asp

<210> 23
<211> 726
<212> DNA
<213> Homo sapiens

<400> 23
atgtgcagcg gtgctggggt catgatggct cggtgggcag cgaggggccg ggccggctgg 60

aggagcacag tgcggattct gtcgccactg ggacactgtg aaccaggagt gagtcggagc 120

tgccgcgctg cccaggccat ggactgtgag gtcaacaacg gttccagcct cagggatgag 180

tgcatcacaa acctactggt gtttggcttc ctccaaagct gttctgacaa cagcttccgc 240

agagagctgg acgcactggg ccacgagctg ccagtgctgg ctccccagtg ggagggctac 300

gatgagctgc agactgatgg caaccgcagc agccactccc gcttgggaag aatagaggca 360

gattctgaaa gtcaagaaga catcatccgg aatattgcca ggcacctcgc ccaggtcggg 420

gacagcatgg accgtagcat ccctccgggc ctggtgaacg gcctggccct gcagctcagg 480

aacaccagcc ggtcggagga ggaccggaac agggacctgg ccactgccct ggagcagctg 540

ctgcaggcct accctagaga catggagaag gagaagacca tgctggtgct ggccctgctg 600

ctggccaaga aggtggccag tcacacgccg tccttgctcc gtgatgtctt tcacacaaca 660

gtgaatttta ttaaccagaa cctacgcacc tacgtgagga gcttagccag aaatgggatg 720

gactga 726

<210> 24
<211> 297
<212> PRT
<213> Homo sapiens

<400> 24

Met Arg Ala Leu Arg Ala Gly Leu Thr Leu Ala Ser Gly Ala Gly Leu
1 5 10 15

Gly Ala Val Val Glu Gly Trp Arg Arg Arg Arg Glu Asp Ala Arg Ala
20 25 30

Ala Leu Gly Leu Leu Gly Arg Leu Pro Val Leu Pro Val Ala Ala Ala
35 40 45

Ala Glu Leu Pro Pro Val Pro Gly Gly Pro Arg Gly Pro Gly Glu Leu
50 55 60

Ala Lys Tyr Gly Leu Pro Gly Leu Ala Gln Leu Lys Ser Arg Glu Ser
65 70 75 80

Tyr Val Leu Cys Tyr Asp Pro Arg Thr Arg Gly Ala Leu Trp Val Val
85 90 95

Glu Gln Leu Arg Pro Glu Arg Leu Arg Gly Asp Gly Asp Arg Arg Glu
100 105 110

Cys Asp Phe Arg Glu Asp Asp Ser Val His Ala Tyr His Arg Ala Thr
115 120 125

Asn Ala Asp Tyr Arg Gly Ser Gly Phe Asp Arg Gly His Leu Ala Ala
130 135 140

Ala Ala Asn His Arg Trp Ser Gln Lys Ala Met Asp Asp Thr Phe Tyr
145 150 155 160

Leu Ser Lys Val Ala Pro Gln Val Pro His Leu Asn Gln Asn Ala Trp
165 170 175

Asn Asn Leu Glu Lys Tyr Ser Arg Ser Leu Thr Arg Ser Tyr Gln Asn
180 185 190

Val Tyr Val Cys Thr Gly Pro Leu Phe Leu Pro Arg Thr Glu Ala Asp
195 200 205

Gly Lys Ser Tyr Val Lys Tyr Gln Val Ile Gly Lys Asn His Val Ala
210 215 220

Val Pro Thr His Phe Phe Lys Val Leu Ile Leu Glu Ala Ala Gly Gly
225 230 235 240

Gln Ile Glu Leu Arg Thr Tyr Val Met Pro Asn Ala Pro Val Asp Glu
245 250 255

Ala Ile Pro Leu Glu Arg Phe Leu Val Pro Ile Glu Ser Ile Glu Arg
260 265 270

Ala Ser Gly Leu Leu Phe Val Pro Asn Ile Leu Ala Arg Ala Gly Ser
275 280 285

Leu Lys Ala Ile Thr Ala Gly Ser Lys
290 295

<210> 25
<211> 894
<212> DNA
<213> Homo sapiens

<400> 25
atgcgggcgc tgcgggccgg cctgaccctg gcgtcgggcg cggggctggg tgcggtcgtc 60

gagggctggc ggcggcggcg ggaggacgcg cgggcggcgc tgggactgct gggccggctg 120

cccgtgctgc ccgtggcggc ggcagccgag ttgccccctg tgcccggggg accccgcggc 180

ccgggcgagt tggccaagta cgggctgccg gggctggcgc agctcaagag ccgcgagtcg 240

tacgtgctgt gctacgaccc gcgcacccgc ggcgcgctct gggtggtgga gcagctgcga 300

cccgagcgtc tccgcggcga cggcgaccgg cgcgagtgcg acttccgcga ggacgactcg 360

gtgcacgcgt accaccgtgc caccaacgcc gactaccgcg gcagtggctt cgaccgcggt 420

cacctggccg ccgccgccaa ccaccgctgg agccagaagg ccatggacga cacgttctac 480

ctgagcaaag tcgcgcccca ggtgccccac ctcaaccaga atgcctggaa caacctggag 540

aaatatagcc gcagcttgac ccgcagctac caaaacgtct atgtctgcac agggccactc 600

ttcctgccca ggacagaggc tgatgggaaa tcctacgtaa agtaccaggt catcggcaag 660

aaccacgtgg cagtgcccac acacttcttc aaggtgctga tcctggaggc agcaggtggg 720

caaattgagc tccgcaccta cgtgatgccc aacgcacctg tggatgaggc catcccactg 780

gagcgcttcc tggtgcccat cgagagcatt gagcgggctt cggggctgct ctttgtgcca 840

aacatcctgg cgcgggcagg cagcctcaag gccatcacgg cgggcagtaa gtga 894

<210> 26
<211> 338
<212> PRT
<213> Homo sapiens

<400> 26

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Met Leu Gln Lys Pro Lys Ser Val Lys Leu Arg Ala Leu Arg Ser Pro
1               5                  10                  15

Arg Lys Phe Gly Val Ala Gly Arg Ser Cys Gln Glu Val Leu Arg Lys
            20                  25                  30

Gly Cys Leu Arg Phe Gln Leu Pro Glu Arg Gly Ser Arg Leu Cys Leu
        35                  40                  45

Tyr Glu Asp Gly Thr Glu Leu Thr Glu Asp Tyr Phe Pro Ser Val Pro
    50                  55                  60

Asp Asn Ala Glu Leu Val Leu Leu Thr Leu Gly Gln Ala Trp Gln Gly
65                  70                  75                  80

Tyr Val Ser Asp Ile Arg Arg Phe Leu Ser Ala Phe His Glu Pro Gln
                85                  90                  95

Val Gly Leu Ile Gln Ala Ala Gln Gln Leu Leu Cys Asp Glu Gln Ala
            100                 105                 110

Pro Gln Arg Gln Arg Leu Leu Ala Asp Leu Leu His Asn Val Ser Gln
        115                 120                 125

Asn Ile Ala Ala Glu Thr Arg Ala Glu Asp Pro Pro Trp Phe Glu Gly
    130                 135                 140

Leu Glu Ser Arg Phe Gln Ser Lys Ser Gly Tyr Leu Arg Tyr Ser Cys
145                 150                 155                 160

Glu Ser Arg Ile Arg Ser Tyr Leu Arg Glu Val Ser Ser Tyr Pro Ser
                165                 170                 175

Thr Val Gly Ala Glu Ala Gln Glu Glu Phe Leu Arg Val Leu Gly Ser
            180                 185                 190

Met Cys Gln Arg Leu Arg Ser Met Gln Tyr Asn Gly Ser Tyr Phe Asp
        195                 200                 205

Arg Gly Ala Lys Gly Gly Ser Arg Leu Cys Thr Pro Glu Gly Trp Phe
    210                 215                 220
```

Ser Cys Gln Gly Pro Phe Asp Met Asp Ser Cys Leu Ser Arg His Ser
225 230 235 240

Ile Asn Pro Tyr Ser Asn Arg Glu Ser Arg Ile Leu Phe Ser Thr Trp
245 250 255

Asn Leu Asp His Ile Ile Glu Lys Lys Arg Thr Ile Ile Pro Thr Leu
260 265 270

Val Glu Ala Ile Lys Glu Gln Asp Gly Arg Glu Val Asp Trp Glu Tyr
275 280 285

Phe Tyr Gly Leu Leu Phe Thr Ser Glu Asn Leu Lys Leu Val His Ile
290 295 300

Val Cys His Lys Lys Thr Thr His Lys Leu Asn Cys Asp Pro Ser Arg
305 310 315 320

Ile Tyr Lys Pro Gln Thr Arg Leu Lys Arg Lys Gln Pro Val Arg Lys
325 330 335

Arg Gln

<210> 27
<211> 1017
<212> DNA
<213> Homo sapiens

<400> 27
atgctccaga agcccaagag cgtgaagctg cgggccctgc gcagcccgag gaagttcggc 60

gtggctggcc ggagctgcca ggaggtgctg cgcaagggct gtctccgctt ccagctccct 120

gagcgcggtt cccggctgtg cctgtacgag gatggcacgg agctgacgga agattacttc 180

cccagtgttc ccgacaacgc cgagctggtg ctgctcacct tgggccaggc ctggcagggc 240

tatgtgagcg acatcaggcg cttcctcagt gcatttcacg agccacaggt ggggctcatc 300

caggccgccc agcagctgct gtgtgatgag caggccccac agaggcagag gctgctggct 360

gacctcctgc acaacgtcag ccagaacatc gcggccgaga cccgggctga ggacccgccg 420

tggtttgaag gcttggagtc ccgatttcag agcaagtctg gctatctgag atacagctgt 480

gagagccgga tccggagtta cctgagggag gtgagctcct acccctccac ggtgggtgcg 540

gaggctcagg aggaattcct gcgggtcctc ggctccatgt gccagaggct ccggtccatg 600

cagtacaatg gcagctactt cgacagagga gccaagggcg gcagccgcct ctgcacaccg 660

gaaggctggt tctcctgcca gggtcccttt gacatggaca gctgcttatc aagacactcc 720

atcaacccct acagtaacag ggagagcagg atcctcttca gcacctggaa cctggatcac 780

ataatagaaa agaaacgcac catcattcct acactggtgg aagcaattaa ggaacaagat 840

ggaagagaag tggactggga gtatttttat ggcctgcttt ttacctcaga gaacctaaaa 900

ctagtgcaca ttgtctgcca taagaaaacc acccacaagc tcaactgtga cccaagcaga 960

atctacaaac cccagacaag gttgaagcgg aagcagcctg tgcggaaacg ccagtga 1017

<210> 28
<211> 331
<212> PRT
<213> Homo sapiens

<400> 28

Met Glu Val Thr Gly Asp Ala Gly Val Pro Glu Ser Gly Glu Ile Arg
1 5 10 15

Thr Leu Lys Pro Cys Leu Leu Arg Arg Asn Tyr Ser Arg Glu Gln His
20 25 30

Gly Val Ala Ala Ser Cys Leu Glu Asp Leu Arg Ser Lys Ala Cys Asp
35 40 45

Ile Leu Ala Ile Asp Lys Ser Leu Thr Pro Val Thr Leu Val Leu Ala
50 55 60

Glu Asp Gly Thr Ile Val Asp Asp Asp Asp Tyr Phe Leu Cys Leu Pro
65 70 75 80

Ser Asn Thr Lys Phe Val Ala Leu Ala Ser Asn Glu Lys Trp Ala Tyr
85 90 95

Asn Asn Ser Asp Gly Gly Thr Ala Trp Ile Ser Gln Glu Ser Phe Asp
100 105 110

Val Asp Glu Thr Asp Ser Gly Ala Gly Leu Lys Trp Lys Asn Val Ala
115 120 125

Arg Gln Leu Lys Glu Asp Leu Ser Ser Ile Ile Leu Leu Ser Glu Glu
130 135 140

Asp Leu Gln Met Leu Val Asp Ala Pro Cys Ser Asp Leu Ala Gln Glu
145 150 155 160

Leu Arg Gln Ser Cys Ala Thr Val Gln Arg Leu Gln His Thr Leu Gln
165 170 175

```
Gln Val Leu Asp Gln Arg Glu Glu Val Arg Gln Ser Lys Gln Leu Leu
            180                 185                 190

Gln Leu Tyr Leu Gln Ala Leu Glu Lys Glu Gly Ser Leu Leu Ser Lys
        195                 200                 205

Gln Glu Glu Ser Lys Ala Ala Phe Gly Glu Glu Val Asp Ala Val Asp
    210                 215                 220

Thr Gly Ile Ser Arg Glu Thr Ser Ser Asp Val Ala Leu Ala Ser His
225                 230                 235                 240

Ile Leu Thr Ala Leu Arg Glu Lys Gln Ala Pro Glu Leu Ser Leu Ser
                245                 250                 255

Ser Gln Asp Leu Glu Leu Val Thr Lys Glu Asp Pro Lys Ala Leu Ala
            260                 265                 270

Val Ala Leu Asn Trp Asp Ile Lys Lys Thr Glu Thr Val Gln Glu Ala
        275                 280                 285

Cys Glu Arg Glu Leu Ala Leu Arg Leu Gln Gln Thr Gln Ser Leu His
    290                 295                 300

Ser Leu Arg Ser Ile Ser Ala Ser Lys Ala Ser Pro Pro Gly Asp Leu
305                 310                 315                 320

Gln Asn Pro Lys Arg Ala Arg Gln Asp Pro Thr
                325                 330
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<210> 29
<211> 996
<212> DNA
<213> Homo sapiens

<400> 29

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atggaggtga ccggggacgc cggggtacca gaatctggcg agatccggac tctaaagccg     60

tgtctgctgc gccgcaacta cagccgcgaa cagcacggcg tggccgcctc ctgcctcgaa    120

gacctgagga gcaaggcctg tgacattctg gccattgata agtccctgac accagtcacc    180

ctggtcctgg cagaggatgg caccatagtg gatgatgacg attactttct gtgtctacct    240

tccaatacta agtttgtggc attggctagt aatgagaaat gggcatacaa caattcagat    300

ggaggtacag cttggatttc ccaagagtcc tttgatgtag atgaaacaga cagcggggca    360

gggttgaagt ggaagaatgt ggccaggcag ctgaaagaag atctgtccag catcatcctc    420

ctatcagagg aggacctcca gatgcttgtt gacgctccct gctcagacct ggctcaggaa    480
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ctacgtcaga gttgtgccac cgtccagcgg ctgcagcaca cactccaaca ggtgcttgac 540

caaagagagg aagtgcgtca gtccaagcag ctcctgcagc tgtacctcca ggctttggag 600

aaagagggca gcctcttgtc aaagcaggaa gagtccaaag ctgcctttgg tgaggaggtg 660

gatgcagtag acacgggtat cagcagagag acctcctcgg acgttgcgct ggcgagccac 720

atccttactg cactgaggga gaagcaggct ccagagctga gcttatctag tcaggatttg 780

gagttggtta ccaaggaaga ccccaaagca ctggctgttg ccttgaactg ggacataaag 840

aagacggaga ctgttcagga ggcctgtgag cgggagctcg ccctgcgcct gcagcagacg 900

cagagcttgc attctctccg gagcatctca gcaagcaagg cctcaccacc tggtgacctg 960

cagaatccta agcgagccag acaggatccc acatag 996

<210> 30
<211> 1207
<212> PRT
<213> Homo sapiens

<400> 30

Met Leu Leu Thr Leu Ile Ile Leu Leu Pro Val Val Ser Lys Phe Ser
1 5 10 15

Phe Val Ser Leu Ser Ala Pro Gln His Trp Ser Cys Pro Glu Gly Thr
20 25 30

Leu Ala Gly Asn Gly Asn Ser Thr Cys Val Gly Pro Ala Pro Phe Leu
35 40 45

Ile Phe Ser His Gly Asn Ser Ile Phe Arg Ile Asp Thr Glu Gly Thr
50 55 60

Asn Tyr Glu Gln Leu Val Val Asp Ala Gly Val Ser Val Ile Met Asp
65 70 75 80

Phe His Tyr Asn Glu Lys Arg Ile Tyr Trp Val Asp Leu Glu Arg Gln
85 90 95

Leu Leu Gln Arg Val Phe Leu Asn Gly Ser Arg Gln Glu Arg Val Cys
100 105 110

Asn Ile Glu Lys Asn Val Ser Gly Met Ala Ile Asn Trp Ile Asn Glu
115 120 125

Glu Val Ile Trp Ser Asn Gln Gln Glu Gly Ile Ile Thr Val Thr Asp
130 135 140

Met Lys Gly Asn Asn Ser His Ile Leu Leu Ser Ala Leu Lys Tyr Pro
145 150 155 160

Ala Asn Val Ala Val Asp Pro Val Glu Arg Phe Ile Phe Trp Ser Ser
165 170 175

Glu Val Ala Gly Ser Leu Tyr Arg Ala Asp Leu Asp Gly Val Gly Val
180 185 190

Lys Ala Leu Leu Glu Thr Ser Glu Lys Ile Thr Ala Val Ser Leu Asp
195 200 205

Val Leu Asp Lys Arg Leu Phe Trp Ile Gln Tyr Asn Arg Glu Gly Ser
210 215 220

Asn Ser Leu Ile Cys Ser Cys Asp Tyr Asp Gly Gly Ser Val His Ile
225 230 235 240

Ser Lys His Pro Thr Gln His Asn Leu Phe Ala Met Ser Leu Phe Gly
245 250 255

Asp Arg Ile Phe Tyr Ser Thr Trp Lys Met Lys Thr Ile Trp Ile Ala
260 265 270

Asn Lys His Thr Gly Lys Asp Met Val Arg Ile Asn Leu His Ser Ser
275 280 285

Phe Val Pro Leu Gly Glu Leu Lys Val Val His Pro Leu Ala Gln Pro
290 295 300

Lys Ala Glu Asp Asp Thr Trp Glu Pro Glu Gln Lys Leu Cys Lys Leu
305 310 315 320

Arg Lys Gly Asn Cys Ser Ser Thr Val Cys Gly Gln Asp Leu Gln Ser
325 330 335

His Leu Cys Met Cys Ala Glu Gly Tyr Ala Leu Ser Arg Asp Arg Lys
340 345 350

Tyr Cys Glu Asp Val Asn Glu Cys Ala Phe Trp Asn His Gly Cys Thr
355 360 365

Leu Gly Cys Lys Asn Thr Pro Gly Ser Tyr Tyr Cys Thr Cys Pro Val
370 375 380

Gly Phe Val Leu Leu Pro Asp Gly Lys Arg Cys His Gln Leu Val Ser
385 390 395 400

Cys Pro Arg Asn Val Ser Glu Cys Ser His Asp Cys Val Leu Thr Ser
405 410 415

Glu Gly Pro Leu Cys Phe Cys Pro Glu Gly Ser Val Leu Glu Arg Asp
420 425 430

Gly Lys Thr Cys Ser Gly Cys Ser Ser Pro Asp Asn Gly Gly Cys Ser
435 440 445

Gln Leu Cys Val Pro Leu Ser Pro Val Ser Trp Glu Cys Asp Cys Phe
450 455 460

Pro Gly Tyr Asp Leu Gln Leu Asp Glu Lys Ser Cys Ala Ala Ser Gly
465 470 475 480

Pro Gln Pro Phe Leu Leu Phe Ala Asn Ser Gln Asp Ile Arg His Met
485 490 495

His Phe Asp Gly Thr Asp Tyr Gly Thr Leu Leu Ser Gln Gln Met Gly
500 505 510

Met Val Tyr Ala Leu Asp His Asp Pro Val Glu Asn Lys Ile Tyr Phe
515 520 525

Ala His Thr Ala Leu Lys Trp Ile Glu Arg Ala Asn Met Asp Gly Ser
530 535 540

Gln Arg Glu Arg Leu Ile Glu Glu Gly Val Asp Val Pro Glu Gly Leu
545 550 555 560

Ala Val Asp Trp Ile Gly Arg Arg Phe Tyr Trp Thr Asp Arg Gly Lys
565 570 575

Ser Leu Ile Gly Arg Ser Asp Leu Asn Gly Lys Arg Ser Lys Ile Ile
580 585 590

Thr Lys Glu Asn Ile Ser Gln Pro Arg Gly Ile Ala Val His Pro Met
595 600 605

Ala Lys Arg Leu Phe Trp Thr Asp Thr Gly Ile Asn Pro Arg Ile Glu
610 615 620

Ser Ser Ser Leu Gln Gly Leu Gly Arg Leu Val Ile Ala Ser Ser Asp
625 630 635 640

Leu Ile Trp Pro Ser Gly Ile Thr Ile Asp Phe Leu Thr Asp Lys Leu
645 650 655

Tyr Trp Cys Asp Ala Lys Gln Ser Val Ile Glu Met Ala Asn Leu Asp
660 665 670

Gly Ser Lys Arg Arg Arg Leu Thr Gln Asn Asp Val Gly His Pro Phe
675 680 685

Ala Val Ala Val Phe Glu Asp Tyr Val Trp Phe Ser Asp Trp Ala Met
690 695 700

Pro Ser Val Ile Arg Val Asn Lys Arg Thr Gly Lys Asp Arg Val Arg
705 710 715 720

Leu Gln Gly Ser Met Leu Lys Pro Ser Ser Leu Val Val Val His Pro
725 730 735

Leu Ala Lys Pro Gly Ala Asp Pro Cys Leu Tyr Gln Asn Gly Gly Cys
740 745 750

Glu His Ile Cys Lys Lys Arg Leu Gly Thr Ala Trp Cys Ser Cys Arg
755 760 765

Glu Gly Phe Met Lys Ala Ser Asp Gly Lys Thr Cys Leu Ala Leu Asp
770 775 780

Gly His Gln Leu Leu Ala Gly Gly Glu Val Asp Leu Lys Asn Gln Val
785 790 795 800

Thr Pro Leu Asp Ile Leu Ser Lys Thr Arg Val Ser Glu Asp Asn Ile
805 810 815

Thr Glu Ser Gln His Met Leu Val Ala Glu Ile Met Val Ser Asp Gln
820 825 830

Asp Asp Cys Ala Pro Val Gly Cys Ser Met Tyr Ala Arg Cys Ile Ser
835 840 845

Glu Gly Glu Asp Ala Thr Cys Gln Cys Leu Lys Gly Phe Ala Gly Asp
850 855 860

Gly Lys Leu Cys Ser Asp Ile Asp Glu Cys Glu Met Gly Val Pro Val
865 870 875 880

Cys Pro Pro Ala Ser Ser Lys Cys Ile Asn Thr Glu Gly Gly Tyr Val
885 890 895

Cys Arg Cys Ser Glu Gly Tyr Gln Gly Asp Gly Ile His Cys Leu Asp
900 905 910

Ile Asp Glu Cys Gln Leu Gly Val His Ser Cys Gly Glu Asn Ala Ser
915 920 925

Cys Thr Asn Thr Glu Gly Gly Tyr Thr Cys Met Cys Ala Gly Arg Leu
930 935 940

Ser Glu Pro Gly Leu Ile Cys Pro Asp Ser Thr Pro Pro Pro His Leu
945 950 955 960

Arg Glu Asp Asp His His Tyr Ser Val Arg Asn Ser Asp Ser Glu Cys
965 970 975

Pro Leu Ser His Asp Gly Tyr Cys Leu His Asp Gly Val Cys Met Tyr
980 985 990

Ile Glu Ala Leu Asp Lys Tyr Ala Cys Asn Cys Val Val Gly Tyr Ile
995 1000 1005

Gly Glu Arg Cys Gln Tyr Arg Asp Leu Lys Trp Trp Glu Leu Arg
1010 1015 1020

His Ala Gly His Gly Gln Gln Gln Lys Val Ile Val Val Ala Val
1025 1030 1035

Cys Val Val Val Leu Val Met Leu Leu Leu Leu Ser Leu Trp Gly
1040 1045 1050

Ala His Tyr Tyr Arg Thr Gln Lys Leu Leu Ser Lys Asn Pro Lys
1055 1060 1065

Asn Pro Tyr Glu Glu Ser Ser Arg Asp Val Arg Ser Arg Arg Pro
1070 1075 1080

Ala Asp Thr Glu Asp Gly Met Ser Ser Cys Pro Gln Pro Trp Phe
1085 1090 1095

```
Val Val  Ile Lys Glu His Gln  Asp Leu Lys Asn Gly  Gly Gln Pro
    1100                1105                1110

Val Ala  Gly Glu Asp Gly Gln  Ala Ala Asp Gly Ser  Met Gln Pro
    1115                1120                1125

Thr Ser  Trp Arg Gln Glu Pro  Gln Leu Cys Gly Met  Gly Thr Glu
    1130                1135                1140

Gln Gly  Cys Trp Ile Pro Val  Ser Ser Asp Lys Gly  Ser Cys Pro
    1145                1150                1155

Gln Val  Met Glu Arg Ser Phe  His Met Pro Ser Tyr  Gly Thr Gln
    1160                1165                1170

Thr Leu  Glu Gly Gly Val Glu  Lys Pro His Ser Leu  Leu Ser Ala
    1175                1180                1185

Asn Pro  Leu Trp Gln Gln Arg  Ala Leu Asp Pro Pro  His Gln Met
    1190                1195                1200

Glu Leu  Thr Gln
    1205
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<210> 31
<211> 3624
<212> DNA
<213> Homo sapiens

<400> 31
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tcagcaccgc agcactggag ctgtcctgaa ggtactctcg caggaaatgg gaattctact 120

tgtgtgggtc ctgcaccctt cttaattttc tcccatggaa atagtatctt taggattgac 180

acagaaggaa ccaattatga gcaattggtg gtggatgctg gtgtctcagt gatcatggat 240

tttcattata atgagaaaag aatctattgg gtggatttag aaagacaact tttgcaaaga 300

gtttttctga atgggtcaag gcaagagaga gtatgtaata tagagaaaaa tgtttctgga 360

atggcaataa attggataaa tgaagaagtt atttggtcaa atcaacagga aggaatcatt 420

acagtaacag atatgaaagg aaataattcc cacattcttt taagtgcttt aaaatatcct 480

gcaaatgtag cagttgatcc agtagaaagg tttatatttt ggtcttcaga ggtggctgga 540

agcctttata gagcagatct cgatggtgtg ggagtgaagg ctctgttgga gacatcagag 600

aaaataacag ctgtgtcatt ggatgtgctt gataagcggc tgttttggat tcagtacaac 660

agagaaggaa gcaattctct tatttgctcc tgtgattatg atggaggttc tgtccacatt 720

agtaaacatc caacacagca taatttgttt gcaatgtccc tttttggtga ccgtatcttc 780
tattcaacat ggaaaatgaa gacaatttgg atagccaaca aacacactgg aaaggacatg 840
gttagaatta acctccattc atcatttgta ccacttggtg aactgaaagt agtgcatcca 900
cttgcacaac ccaaggcaga agatgacact tgggagcctg agcagaaact ttgcaaattg 960
aggaaaggaa actgcagcag cactgtgtgt gggcaagacc tccagtcaca cttgtgcatg 1020
tgtgcagagg gatacgccct aagtcgagac cggaagtact gtgaagatgt taatgaatgt 1080
gctttttgga atcatggctg tactcttggg tgtaaaaaca cccctggatc ctattactgc 1140
acgtgccctg taggatttgt tctgcttcct gatgggaaac gatgtcatca acttgtttcc 1200
tgtccacgca atgtgtctga atgcagccat gactgtgttc tgacatcaga aggtcccttа 1260
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tgtgattgct ttcctgggta tgacctacaa ctggatgaaa aaagctgtgc agcttcagga 1440
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acagactatg gaactctgct cagccagcag atgggaatgg tttatgcccc agatcatgac 1560
cctgtggaaa ataagatata ctttgcccat acagccctga agtggataga gagagctaat 1620
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gctgtggact ggattggccg tagattctat tggacagaca gagggaaatc tctgattgga 1740
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ccacgaattg aaagttcttc cctccaaggc cttggccgtc tggttatagc cagctctgat 1920
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gccaagcagt ctgtgattga aatggccaat ctggatggtt caaaacgccg aagacttacc 2040
cagaatgatg taggtcaccc atttgctgta gcagtgtttg aggattatgt gtggttctca 2100
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gaaggctacc aaggagatgg gattcactgt cttgatattg atgagtgcca actgggggtg 2760

cacagctgtg gagagaatgc cagctgcaca aatacagagg gaggctatac ctgcatgtgt 2820

gctggacgcc tgtctgaacc aggactgatt tgccctgact ctactccacc ccctcacctc 2880

agggaagatg accaccacta ttccgtaaga aatagtgact ctgaatgtcc cctgtcccac 2940

gatgggtact gcctccatga tggtgtgtgc atgtatattg aagcattgga caagtatgca 3000

tgcaactgtg ttgttggcta catcggggag cgatgtcagt accgagacct gaagtggtgg 3060

gaactgcgcc acgctggcca cgggcagcag cagaaggtca tcgtggtggc tgtctgcgtg 3120

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ataaaagaac accaagacct caagaatggg ggtcaaccag tggctggtga ggatggccag 3360

gcagcagatg ggtcaatgca accaacttca tggaggcagg agccccagtt atgtggaatg 3420

ggcacagagc aaggctgctg gattccagta tccagtgata agggctcctg tccccaggta 3480

atggagcgaa gctttcatat gccctcctat gggacacaga cccttgaagg gggtgtcgag 3540

aagccccatt ctctcctatc agctaaccca ttatggcaac aaagggccct ggacccacca 3600

caccaaatgg agctgactca gtga 3624

<210> 32
<211> 191
<212> PRT
<213> Homo sapiens

<400> 32

Met Asn Phe Leu Leu Ser Trp Val His Trp Ser Leu Ala Leu Leu Leu
1 5 10 15

Tyr Leu His His Ala Lys Trp Ser Gln Ala Ala Pro Met Ala Glu Gly
20 25 30

Gly Gly Gln Asn His His Glu Val Val Lys Phe Met Asp Val Tyr Gln
35 40 45

Arg Ser Tyr Cys His Pro Ile Glu Thr Leu Val Asp Ile Phe Gln Glu
50 55 60

Tyr Pro Asp Glu Ile Glu Tyr Ile Phe Lys Pro Ser Cys Val Pro Leu
65 70 75 80

```
Met Arg Cys Gly Gly Cys Cys Asn Asp Glu Gly Leu Glu Cys Val Pro
                85                  90                  95

Thr Glu Glu Ser Asn Ile Thr Met Gln Ile Met Arg Ile Lys Pro His
            100                 105                 110

Gln Gly Gln His Ile Gly Glu Met Ser Phe Leu Gln His Asn Lys Cys
        115                 120                 125

Glu Cys Arg Pro Lys Lys Asp Arg Ala Arg Gln Glu Asn Pro Cys Gly
    130                 135                 140

Pro Cys Ser Glu Arg Arg Lys His Leu Phe Val Gln Asp Pro Gln Thr
145                 150                 155                 160

Cys Lys Cys Ser Cys Lys Asn Thr Asp Ser Arg Cys Lys Ala Arg Gln
                165                 170                 175

Leu Glu Leu Asn Glu Arg Thr Cys Arg Cys Asp Lys Pro Arg Arg
            180                 185                 190
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<210> 33
<211> 576
<212> DNA
<213> Homo sapiens

<400> 33
atgaactttc tgctgtcttg ggtgcattgg agccttgcct tgctgctcta cctccaccat 60

gccaagtggt cccaggctgc acccatggca gaaggagggg ggcagaatca tcacgaagtg 120

gtgaagttca tggatgtcta tcagcgcagc tactgccatc caatcgagac cctggtggac 180

atcttccagg agtaccctga tgagatcgag tacatcttca agccatcctg tgtgcccctg 240

atgcgatgcg ggggctgctg caatgacgag ggcctggagt gtgtgcccac tgaggagtcc 300

aacatcacca tgcagattat gcggatcaaa cctcaccaag gccagcacat aggagagatg 360

agcttcctac agcacaacaa atgtgaatgc agaccaaaga aagatagagc aagacaagaa 420

aatccctgtg ggccttgctc agagcggaga aagcatttgt ttgtacaaga tccgcagacg 480

tgtaaatgtt cctgcaaaaa cacagactcg cgttgcaagg cgaggcagct tgagttaaac 540

gaacgtactt gcagatgtga caagccgagg cggtga 576

<210> 34
<211> 175
<212> PRT
<213> Homo sapiens

<400> 34

Met Asp Ile Ala Ile His His Pro Trp Ile Arg Arg Pro Phe Phe Pro
1 5 10 15

Phe His Ser Pro Ser Arg Leu Phe Asp Gln Phe Phe Gly Glu His Leu
20 25 30

Leu Glu Ser Asp Leu Phe Pro Thr Ser Thr Ser Leu Ser Pro Phe Tyr
35 40 45

Leu Arg Pro Pro Ser Phe Leu Arg Ala Pro Ser Trp Phe Asp Thr Gly
50 55 60

Leu Ser Glu Met Arg Leu Glu Lys Asp Arg Phe Ser Val Asn Leu Asp
65 70 75 80

Val Lys His Phe Ser Pro Glu Glu Leu Lys Val Lys Val Leu Gly Asp
85 90 95

Val Ile Glu Val His Gly Lys His Glu Glu Arg Gln Asp Glu His Gly
100 105 110

Phe Ile Ser Arg Glu Phe His Arg Lys Tyr Arg Ile Pro Ala Asp Val
115 120 125

Asp Pro Leu Thr Ile Thr Ser Ser Leu Ser Ser Asp Gly Val Leu Thr
130 135 140

Val Asn Gly Pro Arg Lys Gln Val Ser Gly Pro Glu Arg Thr Ile Pro
145 150 155 160

Ile Thr Arg Glu Glu Lys Pro Ala Val Thr Ala Ala Pro Lys Lys
165 170 175

<210> 35
<211> 528
<212> DNA
<213> Homo sapiens

<400> 35
atggacatcg ccatccacca cccctggatc cgccgccccc tctttccttt ccactccccc 60

agccgcctct ttgaccagtt cttcggagag cacctgttgg agtctgatct tttcccgacg 120

tctacttccc tgagtccctt ctaccttcgg ccaccctcct tcctgcgggc acccagctgg 180

tttgacactg gactctcaga gatgcgcctg gagaaggaca ggttctctgt caacctggat 240

gtgaagcact tctccccaga ggaactcaaa gttaaggtgt tgggagatgt gattgaggtg 300

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aaataccgga tcccagctga tgtagaccct ctcaccatta cttcatccct gtcatctgat 420

ggggtcctca ctgtgaatgg accaaggaaa caggtctctg gccctgagcg caccattccc 480

atcacccgtg aagagaagcc tgctgtcacc gcagccccca agaaatag 528

<210> 36
<211> 378
<212> PRT
<213> Drosophila melanogaster

<400> 36

Met Thr Met Ser Thr Asn Asn Cys Glu Ser Met Thr Ser Tyr Phe Thr
1 5 10 15

Asn Ser Tyr Met Gly Ala Asp Met His His Gly His Tyr Pro Gly Asn
20 25 30

Gly Val Thr Asp Leu Asp Ala Gln Gln Met His His Tyr Ser Gln Asn
35 40 45

Ala Asn His Gln Gly Asn Met Pro Tyr Pro Arg Phe Pro Pro Tyr Asp
50 55 60

Arg Met Pro Tyr Tyr Asn Gly Gln Gly Met Asp Gln Gln Gln Gln His
65 70 75 80

Gln Val Tyr Ser Arg Pro Asp Ser Pro Ser Ser Gln Val Gly Gly Val
85 90 95

Met Pro Gln Ala Gln Thr Asn Gly Gln Leu Gly Val Pro Gln Gln Gln
100 105 110

Gln Gln Gln Gln Gln Gln Pro Ser Gln Asn Gln Gln Gln Gln Gln Ala
115 120 125

Gln Gln Ala Pro Gln Gln Leu Gln Gln Gln Leu Pro Gln Val Thr Gln
130 135 140

Gln Val Thr His Pro Gln Gln Gln Gln Gln Gln Pro Val Val Tyr Ala
145 150 155 160

Ser Cys Lys Leu Gln Ala Ala Val Gly Gly Leu Gly Met Val Pro Glu
165 170 175

```
Gly Gly Ser Pro Pro Leu Val Asp Gln Met Ser Gly His His Met Asn
            180                 185                 190

Ala Gln Met Thr Leu Pro His His Met Gly His Pro Gln Ala Gln Leu
        195                 200                 205

Gly Tyr Thr Asp Val Gly Val Pro Asp Val Thr Glu Val His Gln Asn
    210                 215                 220

His His Asn Met Gly Met Tyr Gln Gln Gln Ser Gly Val Pro Pro Val
225                 230                 235                 240

Gly Ala Pro Pro Gln Gly Met Met His Gln Gly Gln Gly Pro Pro Gln
                245                 250                 255

Met His Gln Gly His Pro Gly Gln His Thr Pro Pro Ser Gln Asn Pro
            260                 265                 270

Asn Ser Gln Ser Ser Gly Met Pro Ser Pro Leu Tyr Pro Trp Met Arg
        275                 280                 285

Ser Gln Phe Gly Lys Cys Gln Glu Arg Lys Arg Gly Arg Gln Thr Tyr
    290                 295                 300

Thr Arg Tyr Gln Thr Leu Glu Leu Glu Lys Glu Phe His Phe Asn Arg
305                 310                 315                 320

Tyr Leu Thr Arg Arg Arg Arg Ile Glu Ile Ala His Ala Leu Cys Leu
                325                 330                 335

Thr Glu Arg Gln Ile Lys Ile Trp Phe Gln Asn Arg Arg Met Lys Trp
            340                 345                 350

Lys Lys Glu Asn Lys Thr Lys Gly Glu Pro Gly Ser Gly Gly Glu Gly
        355                 360                 365

Asp Glu Ile Thr Pro Pro Asn Ser Pro Gln
    370                 375
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<210> 37
<211> 1137
<212> DNA
<213> Drosophila melanogaster

<400> 37
atgacgatga gtacaaacaa ctgcgagagc atgacctcgt acttcaccaa ctcgtacatg 60

ggggcggaca tgcatcatgg gcactacccg ggcaacgggg tcaccgacct ggacgcccag 120

cagatgcacc actacagcca gaacgcgaat caccagggca acatgcccta cccgcgcttt 180

ccaccctacg accgcatgcc ctactacaac ggccagggga tggaccagca gcagcagcac 240

caggtctact cccgcccgga cagcccctcc agccaggtgg gcggggtcat gccccaggcg 300

cagaccaacg gtcagttggg tgttccccag cagcaacagc agcagcagca acagccctcg 360

cagaaccagc agcaacagca ggcgcagcag gccccacagc aactgcagca gcagctgccg 420

caggtgacgc aacaggtgac acatccgcag cagcaacaac agcagcccgt cgtctacgcc 480

agctgcaagt tgcaagcggc cgttggtgga ctgggtatgg ttccccgaggg cggatcgcct 540

ccgctggtgg atcaaatgtc cggtcaccac atgaacgccc agatgacgct gccccatcac 600

atgggacatc cgcaggcgca gttgggctat acggacgttg gagttcccga cgtgacagag 660

gtccatcaga accatcacaa catgggcatg taccagcagc agtcgggagt tccgccggtg 720

ggtgccccac ctcagggcat gatgcaccag ggccagggtc ctccacagat gcaccaggga 780

catcctggcc aacacacgcc tccttcccaa aacccgaact cgcagtcctc ggggatgccg 840

tctccactgt atccctggat gcgaagtcag tttggtaagt gtcaagaacg caaacgcgga 900

aggcagacat acacccggta ccagactcta gagctagaga aggagtttca cttcaatcgc 960

tacttgaccc gtcggcgaag gatcgagatc gcccacgccc tgtgcctcac ggagcgccag 1020

ataaagattt ggttccagaa tcggcgcatg aagtggaaga aggagaacaa gacgaagggc 1080

gagccgggat ccggaggcga aggcgacgag ataacaccac ccaacagtcc gcagtag 1137

<210> 38
<211> 163
<212> PRT
<213> Homo sapiens

<400> 38

Met Ser Glu Ser Gly Phe Lys Leu Leu Cys Gln Cys Leu Gly Phe Gly
1 5 10 15

Ser Gly His Phe Arg Cys Asp Ser Ser Arg Trp Cys His Asp Asn Gly
20 25 30

Val Asn Tyr Lys Ile Gly Glu Lys Trp Asp Arg Gln Gly Glu Asn Gly
35 40 45

```
Gln Met Met Ser Cys Thr Cys Leu Gly Asn Gly Lys Gly Glu Phe Lys
    50                  55                  60

Cys Asp Pro His Glu Ala Thr Cys Tyr Asp Asp Gly Lys Thr Tyr His
65                  70                  75                  80

Val Gly Glu Gln Trp Gln Lys Glu Tyr Leu Gly Ala Ile Cys Ser Cys
                85                  90                  95

Thr Cys Phe Gly Gly Gln Arg Gly Trp Arg Cys Asp Asn Cys Arg Arg
            100                 105                 110

Pro Gly Gly Glu Pro Ser Pro Glu Gly Thr Thr Gly Gln Ser Tyr Asn
        115                 120                 125

Gln Tyr Ser Gln Arg Tyr His Gln Arg Thr Asn Thr Asn Val Asn Cys
    130                 135                 140

Pro Ile Glu Cys Phe Met Pro Leu Asp Val Gln Ala Asp Arg Glu Asp
145                 150                 155                 160

Ser Arg Glu
```

<210> 39
<211> 492
<212> DNA
<213> Homo sapiens

<400> 39

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atgtctgaat caggctttaa actgttgtgc cagtgcttag gctttggaag tggtcatttc     60

agatgtgatt catctagatg gtgccatgac aatggtgtga actacaagat tggagagaag    120

tgggaccgtc agggagaaaa tggccagatg atgagctgca catgtcttgg gaacggaaaa    180

ggagaattca agtgtgaccc tcatgaggca acgtgttatg atgatgggaa gacataccac    240

gtaggagaac agtggcagaa ggaatatctc ggtgccattt gctcctgcac atgctttgga    300

ggccagcggg gctggcgctg tgacaactgc cgcagacctg ggggtgaacc cagtcccgaa    360

ggcactactg gccagtccta caaccagtat tctcagagat accatcagag aacaaacact    420

aatgttaatt gcccaattga gtgcttcatg cctttagatg tacaggctga cagagaagat    480

tcccgagagt ag                                                        492
```

<210> 40
<211> 282
<212> PRT
<213> Homo sapiens

<400> 40

Met Arg Gly Met Lys Leu Leu Gly Ala Leu Leu Ala Leu Ala Ala Leu
1 5 10 15

Leu Gln Gly Ala Val Ser Leu Lys Ile Ala Ala Phe Asn Ile Gln Thr
20 25 30

Phe Gly Glu Thr Lys Met Ser Asn Ala Thr Leu Val Ser Tyr Ile Val
35 40 45

Gln Ile Leu Ser Arg Tyr Asp Ile Ala Leu Val Gln Glu Val Arg Asp
50 55 60

Ser His Leu Thr Ala Val Gly Lys Leu Leu Asp Asn Leu Asn Gln Asp
65 70 75 80

Ala Pro Asp Thr Tyr His Tyr Val Val Ser Glu Pro Leu Gly Arg Asn
85 90 95

Ser Tyr Lys Glu Arg Tyr Leu Phe Val Tyr Arg Pro Asp Gln Val Ser
100 105 110

Ala Val Asp Ser Tyr Tyr Tyr Asp Asp Gly Cys Glu Pro Cys Gly Asn
115 120 125

Asp Thr Phe Asn Arg Glu Pro Ala Ile Val Arg Phe Phe Ser Arg Phe
130 135 140

Thr Glu Val Arg Glu Phe Ala Ile Val Pro Leu His Ala Ala Pro Gly
145 150 155 160

Asp Ala Val Ala Glu Ile Asp Ala Leu Tyr Asp Val Tyr Leu Asp Val
165 170 175

Gln Glu Lys Trp Gly Leu Glu Asp Val Met Leu Met Gly Asp Phe Asn
180 185 190

Ala Gly Cys Ser Tyr Val Arg Pro Ser Gln Trp Ser Ser Ile Arg Leu
195 200 205

Trp Thr Ser Pro Thr Phe Gln Trp Leu Ile Pro Asp Ser Ala Asp Thr
210 215 220

Thr Ala Thr Pro Thr His Cys Ala Tyr Asp Arg Ile Val Val Ala Gly
225 230 235 240

Met Leu Leu Arg Gly Ala Val Val Pro Asp Ser Ala Leu Pro Phe Asn
245 250 255

Phe Gln Ala Ala Tyr Gly Leu Ser Asp Gln Leu Ala Gln Ala Ile Ser
260 265 270

Asp His Tyr Pro Val Glu Val Met Leu Lys
275 280

<210> 41
<211> 849
<212> DNA
<213> Homo sapiens

<400> 41
atgaggggca tgaagctgct gggggcgctg ctggcactgg cggccctact gcaggggggcc 60

gtgtccctga agatcgcagc cttcaacatc cagacatttg gggagaccaa gatgtccaat 120

gccaccctcg tcagctacat tgtgcagatc ctgagccgct atgacatcgc cctggtccag 180

gaggtcagag acagccacct gactgccgtg gggaagctgc tggacaacct caatcaggat 240

gcaccagaca cctatcacta cgtggtcagt gagccactgg gacggaacag ctataaggag 300

cgctacctgt tcgtgtacag gcctgaccag gtgtctgcgg tggacagcta ctactacgat 360

gatggctgcg agccctgcgg gaacgacacc ttcaaccgag agccagccat tgtcaggttc 420

ttctcccggt tcacagaggt cagggagttt gccattgttc ccctgcatgc ggccccgggg 480

gacgcagtag ccgagatcga cgctctctat gacgtctacc tggatgtcca agagaaatgg 540

ggcttggagg acgtcatgtt gatgggcgac ttcaatgcgg gctgcagcta tgtgagaccc 600

tcccagtggt catccatccg cctgtggaca agccccacct tccagtggct gatccccgac 660

agcgctgaca ccacagctac acccacgcac tgtgcctatg acaggatcgt ggttgcaggg 720

atgctgctcc gaggcgccgt tgttcccgac tcggctcttc cctttaactt ccaggctgcc 780

tatggcctga gtgaccaact ggcccaagcc atcagtgacc actatccagt ggaggtgatg 840

ctgaagtga 849

<210> 42
<211> 360
<212> PRT
<213> Homo sapiens

<400> 42

Met Ile Pro Leu Leu Leu Ala Ala Leu Leu Cys Val Pro Ala Gly Ala
1 5 10 15

Leu Thr Cys Tyr Gly Asp Ser Gly Gln Pro Val Asp Trp Phe Val Val
20 25 30

Tyr Lys Leu Pro Ala Leu Arg Gly Ser Gly Glu Ala Ala Gln Arg Gly
35 40 45

Leu Gln Tyr Lys Tyr Leu Asp Glu Ser Ser Gly Gly Trp Arg Asp Gly
50 55 60

Arg Ala Leu Ile Asn Ser Pro Glu Gly Ala Val Gly Arg Ser Leu Gln
65 70 75 80

Pro Leu Tyr Arg Ser Asn Thr Ser Gln Leu Ala Phe Leu Leu Tyr Asn
85 90 95

Asp Gln Pro Pro Gln Pro Ser Lys Ala Gln Asp Ser Ser Met Arg Gly
100 105 110

His Thr Lys Gly Val Leu Leu Leu Asp His Asp Gly Gly Phe Trp Leu
115 120 125

Val His Ser Val Pro Asn Phe Pro Pro Pro Ala Ser Ser Ala Ala Tyr
130 135 140

Ser Trp Pro His Ser Ala Cys Thr Tyr Gly Gln Thr Leu Leu Cys Val
145 150 155 160

Ser Phe Pro Phe Ala Gln Phe Ser Lys Met Gly Lys Gln Leu Thr Tyr
165 170 175

Thr Tyr Pro Trp Val Tyr Asn Tyr Gln Leu Glu Gly Ile Phe Ala Gln
180 185 190

Glu Phe Pro Asp Leu Glu Asn Val Val Lys Gly His His Val Ser Gln
195 200 205

Glu Pro Trp Asn Ser Ser Ile Thr Leu Thr Ser Gln Ala Gly Ala Val
210 215 220

```
Phe Gln Ser Phe Ala Lys Phe Ser Lys Phe Gly Asp Asp Leu Tyr Ser
225                 230                 235                 240

Gly Trp Leu Ala Ala Ala Leu Gly Thr Asn Leu Gln Val Gln Phe Trp
                245                 250                 255

His Lys Thr Val Gly Ile Leu Pro Ser Asn Cys Ser Asp Ile Trp Gln
            260                 265                 270

Val Leu Asn Val Asn Gln Ile Ala Phe Pro Gly Pro Ala Gly Pro Ser
        275                 280                 285

Phe Asn Ser Thr Glu Asp His Ser Lys Trp Cys Val Ser Pro Lys Gly
    290                 295                 300

Pro Trp Thr Cys Val Gly Asp Met Asn Arg Asn Gln Gly Glu Glu Gln
305                 310                 315                 320

Arg Gly Gly Gly Thr Leu Cys Ala Gln Leu Pro Ala Leu Trp Lys Ala
                325                 330                 335

Phe Gln Pro Leu Val Lys Asn Tyr Gln Pro Cys Asn Gly Met Ala Arg
            340                 345                 350

Lys Pro Ser Arg Ala Tyr Lys Ile
        355                 360
```

<210> 43
<211> 1083
<212> DNA
<213> Homo sapiens

<400> 43
atgatcccgc tgctgctggc agcgctgctg tgcgtccccg ccggggccct gacctgctac 60

ggggactccg ggcagcctgt agactggttc gtggtctaca agctgccagc tcttagaggg 120

tccggggagg cggcgcagag agggctgcag tacaagtatc tggacgagag ctccggaggc 180

tggcgggacg gcagggcact catcaacagc ccggaggggg ccgtgggccg aagcctgcag 240

ccgctgtacc ggagcaacac cagccagctc gccttcctgc tctacaatga ccaaccgcct 300

caacccagca aggctcagga ctcttccatg cgtgggcaca cgaagggtgt cctgctcctt 360

gaccacgatg ggggcttctg gctggtccac agtgtaccta acttccctcc accggcctcc 420

tctgctgcat acagctggcc tcatagcgcc tgtacctacg ggcagaccct gctctgtgtg 480

tcttttccct tcgctcagtt ctcgaagatg ggcaagcagc tgacctacac ctacccctgg 540

gtctataact accagctgga agggatcttt gcccaggaat tccccgactt ggagaatgtg 600

gtcaagggcc accacgttag ccaagaaccc tggaacagca gcatcacact cacatcccag 660

gccggggctg ttttccagag ctttgccaag ttcagcaaat ttggagatga cctgtactcc 720

ggctggttgg cagcagccct tggtaccaac ctgcaggtcc agttctggca caaaactgta 780

ggcatcctgc cctctaactg ctcggatatc tggcaggttc tgaatgtgaa ccagatagct 840

ttccctggac cagccggccc aagcttcaac agcacagagg accactccaa atggtgcgtg 900

tccccaaaag ggccctggac ctgcgtgggt gacatgaatc ggaaccaggg agaggagcaa 960

cggggtgggg gcacactgtg tgcccagctg ccagccctct ggaaagcctt ccagccgctg 1020

gtgaagaact accagccctg taatggcatg gccaggaagc ccagcagagc ttataagatc 1080

taa 1083

<210> 44
<211> 335
<212> PRT
<213> Homo sapiens

<400> 44

Met Asp Asn Ala Arg Met Asn Ser Phe Leu Glu Tyr Pro Ile Leu Ser
1 5 10 15

Ser Gly Asp Ser Gly Thr Cys Ser Ala Arg Ala Tyr Pro Ser Asp His
20 25 30

Arg Ile Thr Thr Phe Gln Ser Cys Ala Val Ser Ala Asn Ser Cys Gly
35 40 45

Gly Asp Asp Arg Phe Leu Val Gly Arg Gly Val Gln Ile Gly Ser Pro
50 55 60

His His His His His His His His His His Pro Gln Pro Ala Thr Tyr
65 70 75 80

Gln Thr Ser Gly Asn Leu Gly Val Ser Tyr Ser His Ser Ser Cys Gly
85 90 95

Pro Ser Tyr Gly Ser Gln Asn Phe Ser Ala Pro Tyr Ser Pro Tyr Ala
100 105 110

Leu Asn Gln Glu Ala Asp Val Ser Gly Gly Tyr Pro Gln Cys Ala Pro
115 120 125

Ala Val Tyr Ser Gly Asn Leu Ser Ser Pro Met Val Gln His His His
130 135 140

His His Gln Gly Tyr Ala Gly Gly Ala Val Gly Ser Pro Gln Tyr Ile
145 150 155 160

His His Ser Tyr Gly Gln Glu His Gln Ser Leu Ala Leu Ala Thr Tyr
165 170 175

Asn Asn Ser Leu Ser Pro Leu His Ala Ser His Gln Glu Ala Cys Arg
180 185 190

Ser Pro Ala Ser Glu Thr Ser Ser Pro Ala Gln Thr Phe Asp Trp Met
195 200 205

Lys Val Lys Arg Asn Pro Pro Lys Thr Gly Lys Val Gly Glu Tyr Gly
210 215 220

Tyr Leu Gly Gln Pro Asn Ala Val Arg Thr Asn Phe Thr Thr Lys Gln
225 230 235 240

Leu Thr Glu Leu Glu Lys Glu Phe His Phe Asn Lys Tyr Leu Thr Arg
245 250 255

Ala Arg Arg Val Glu Ile Ala Ala Ser Leu Gln Leu Asn Glu Thr Gln
260 265 270

Val Lys Ile Trp Phe Gln Asn Arg Arg Met Lys Gln Lys Lys Arg Glu
275 280 285

Lys Glu Gly Leu Leu Pro Ile Ser Pro Ala Thr Pro Pro Gly Asn Asp
290 295 300

Glu Lys Ala Glu Glu Ser Ser Glu Lys Ser Ser Ser Ser Pro Cys Val
305 310 315 320

Pro Ser Pro Gly Ser Ser Thr Ser Asp Thr Leu Thr Thr Ser His
325 330 335

<210> 45
<211> 1008
<212> DNA
<213> Homo sapiens

<400> 45
atggacaatg caagaatgaa ctccttcctg gaatacccca tacttagcag tggcgactcg 60

gggacctgct cagcccgagc ctacccctcg gaccatagga ttacaacttt ccagtcgtgc 120

gcggtcagcg ccaacagttg cggcggcgac gaccgcttcc tagtgggcag gggggtgcag 180

atcggttcgc cccaccacca ccaccaccac caccatcacc acccccagcc ggctacctac 240

cagacttccg ggaacctggg ggtgtcctac tcccactcaa gttgtggtcc aagctatggc 300

tcacagaact tcagtgcgcc ttacagcccc tacgcgttaa atcaggaagc agacgtaagt 360

ggtgggtacc cccagtgcgc tcccgctgtt tactctggaa atctctcatc tcccatggtc 420

cagcatcacc accaccacca gggttatgct gggggcgcgg tgggctcgcc tcaatacatt 480

caccactcat atggacagga gcaccagagc ctggccctgg ctacgtataa taactccttg 540

tcccctctcc acgccagcca ccaagaagcc tgtcgctccc ccgcatcgga gacatcttct 600

ccagcgcaga cttttgactg gatgaaagtc aaaagaaacc ctcccaaaac agggaaagtt 660

ggagagtacg gctacctggg tcaacccaac gcggtgcgca ccaacttcac taccaagcag 720

ctcacggaac tggagaagga gttccacttc aacaagtacc tgacgcgcgc ccgcagggtg 780

gagatcgctg catccctgca gctcaacgag acccaagtga agatctggtt ccagaaccgc 840

cgaatgaagc aaaagaaacg tgagaaggag ggtctcttgc ccatctctcc ggccaccccg 900

ccaggaaacg acgagaaggc cgaggaatcc tcagagaagt ccagctcttc gccctgcgtt 960

ccttccccgg ggtcttctac ctcagacact ctgactacct cccactga 1008

<210> 46
<211> 180
<212> PRT
<213> Homo sapiens

<400> 46

Met Gly Ile Pro Met Gly Lys Ser Met Leu Val Leu Leu Thr Phe Leu
1 5 10 15

Ala Phe Ala Ser Cys Cys Ile Ala Ala Tyr Arg Pro Ser Glu Thr Leu
20 25 30

Cys Gly Gly Glu Leu Val Asp Thr Leu Gln Phe Val Cys Gly Asp Arg
35 40 45

Gly Phe Tyr Phe Ser Arg Pro Ala Ser Arg Val Ser Arg Arg Ser Arg
50 55 60

Gly Ile Val Glu Glu Cys Cys Phe Arg Ser Cys Asp Leu Ala Leu Leu
65 70 75 80

Glu Thr Tyr Cys Ala Thr Pro Ala Lys Ser Glu Arg Asp Val Ser Thr
85 90 95

Pro Pro Thr Val Leu Pro Asp Asn Phe Pro Arg Tyr Pro Val Gly Lys
100 105 110

```
Phe Phe Gln Tyr Asp Thr Trp Lys Gln Ser Thr Gln Arg Leu Arg Arg
        115                 120                 125

Gly Leu Pro Ala Leu Leu Arg Ala Arg Arg Gly His Val Leu Ala Lys
    130                 135                 140

Glu Leu Glu Ala Phe Arg Glu Ala Lys Arg His Arg Pro Leu Ile Ala
145                 150                 155                 160

Leu Pro Thr Gln Asp Pro Ala His Gly Gly Ala Pro Pro Glu Met Ala
                165                 170                 175

Ser Asn Arg Lys
            180
```

<210> 47
<211> 543
<212> DNA
<213> Homo sapiens

<400> 47

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atgggaatcc caatggggaa gtcgatgctg gtgcttctca ccttcttggc cttcgcctcg     60

tgctgcattg ctgcttaccg ccccagtgag accctgtgcg gcggggagct ggtggacacc    120

ctccagttcg tctgtgggga ccgcggcttc tacttcagca ggcccgcaag ccgtgtgagc    180

cgtcgcagcc gtggcatcgt tgaggagtgc tgtttccgca gctgtgacct ggccctcctg    240

gagacgtact gtgctacccc cgccaagtcc gagagggacg tgtcgacccc tccgaccgtg    300

cttccggaca acttccccag ataccccgtg ggcaagttct tccaatatga cacctggaag    360

cagtccaccc agcgcctgcg caggggcctg cctgccctcc tgcgtgcccg ccggggtcac    420

gtgctcgcca aggagctcga ggcgttcagg gaggccaaac gtcaccgtcc cctgattgct    480

ctacccaccc aagaccccgc ccacgggggc gccccccag agatggccag caatcggaag    540

tga                                                                  543
```

<210> 48
<211> 59
<212> PRT
<213> Homo sapiens

<400> 48

```
Met Ala Glu Gly Glu Ile Thr Thr Phe Thr Ala Leu Thr Glu Lys Phe
1               5                   10                  15

Asn Leu Pro Pro Gly Asn Tyr Lys Lys Pro Lys Leu Leu Tyr Cys Ser
            20                  25                  30
```

```
Asn Gly Gly His Phe Leu Arg Ile Leu Pro Asp Gly Thr Val Asp Gly
        35                  40                  45

Thr Arg Asp Arg Ser Asp Gln His Asn Thr Lys
    50                  55
```

<210> 49
<211> 180
<212> DNA
<213> Homo sapiens

<400> 49
atggctgaag gggaaatcac caccttcaca gccctgaccg agaagtttaa tctgcctcca 60

gggaattaca agaagcccaa actcctctac tgtagcaacg ggggccactt cctgaggatc 120

cttccggatg gcacagtgga tgggacaagg gacaggagcg accagcacaa caccaaatga 180

<210> 50
<211> 102
<212> PRT
<213> Human immunodeficiency virus

<400> 50

```
Met Glu Pro Val Asp Pro Asn Leu Glu Pro Trp Asn His Pro Gly Ser
1               5                   10                  15

Gln Pro Gln Thr Pro Cys Asn Lys Cys Tyr Cys Lys His Cys Ser Tyr
            20                  25                  30

His Cys Leu Val Cys Phe Gln Thr Lys Gly Leu Gly Ile Ser Tyr Gly
        35                  40                  45

Arg Lys Lys Arg Arg Gln Arg Arg Ser Thr Pro Pro Ser Ser Glu Ser
    50                  55                  60

His Gln Asn Pro Leu Ser Lys Gln Pro Leu Pro Gln Thr Arg Gly Asp
65                  70                  75                  80

Gln Thr Gly Ser Glu Glu Gln Lys Lys Lys Val Glu Ser Lys Thr Glu
                85                  90                  95

Thr Asp Pro Tyr Asp Trp
            100
```

<210> 51
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 51
gaattcgcag atctgagcca catcgagacc 30

<210> 52
<211> 37
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 52
gtcgactcag accacctccg tgccggcctc ctggatc 37

<210> 53
<211> 32
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 53
gaattcaagg ctaaagccgg agcaggctct gc 32

<210> 54
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 54
gtcgactcac ttcagggtct tcacgaaatc ttcccc 36

<210> 55
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 55
ggccgaattc aaggctaaag ccggagcagg ctctgc 36

<210> 56
<211> 88
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 56
aattgtcgac ttatttttte catttcatgc ggcggttctg aaaccaaatt ttaatctggc 60

gcttcagggt cttcacgaaa tcttcccc 88

<210> 57
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 57

Arg Gln Ile Lys Ile Trp Phe Gln Asn Arg Arg Met Lys Trp Lys Lys
1 5 10 15

<210> 58
<211> 36
<212> PRT
<213> Human immunodeficiency virus type 1

<400> 58

Cys Phe Ile Thr Lys Ala Leu Gly Ile Ser Tyr Gly Arg Lys Lys Arg
1 5 10 15

Arg Gln Arg Arg Arg Pro Pro Gln Gly Ser Gln Thr His Gln Val Ser
20 25 30

Leu Ser Lys Gln
35

<210> 59
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 59

Gly Arg Lys Lys Arg Arg Gln Arg Arg Arg Pro Pro Gln Cys
1 5 10

<210> 60
<211> 17
<212> PRT
<213> Human immunodeficiency virus type 1

<400> 60

Thr Arg Gln Ala Arg Arg Asn Arg Arg Arg Arg Trp Arg Glu Arg Gln
1 5 10 15

Arg

<210> 61
<211> 21
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 61

Lys Glu Thr Trp Trp Glu Thr Trp Trp Thr Glu Trp Ser Gln Pro Lys
1 5 10 15

Lys Lys Arg Lys Val
20

<210> 62
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 62

Pro Lys Lys Lys Arg Lys Val
1 5

<210> 63
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 63

Pro Ala Ala Lys Arg Val Lys Leu Asp
1 5

<210> 64
<211> 12
<212> PRT
<213> Human immunodeficiency virus type 1

<400> 64

Gly Arg Lys Lys Arg Arg Gln Arg Arg Arg Ala Pro
1 5 10

<210> 65
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 65

Pro Leu Leu Lys Lys Ile Lys Gln
1 5

<210> 66
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 66

Pro Pro Gln Lys Lys Ile Lys Ser
1 5

<210> 67
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 67

Pro Gln Pro Lys Lys Lys Pro
1 5

<210> 68
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 68

Ser Lys Arg Val Ala Lys Arg Lys Leu
1 5

<210> 69
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 69

Gly Arg Arg Arg Arg
1 5

<210> 70
<211> 155
<212> PRT
<213> Homo sapiens

<400> 70

Met Ala Ala Gly Ser Ile Thr Thr Leu Pro Ala Leu Pro Glu Asp Gly
1 5 10 15

Gly Ser Gly Ala Phe Pro Pro Gly His Phe Lys Asp Pro Lys Arg Leu
20 25 30

Tyr Cys Lys Asn Gly Gly Phe Phe Leu Arg Ile His Pro Asp Gly Arg
35 40 45

Val Asp Gly Val Arg Glu Lys Ser Asp Pro His Ile Lys Leu Gln Leu
50 55 60

Gln Ala Glu Glu Arg Gly Val Val Ser Ile Lys Gly Val Cys Ala Asn
65 70 75 80

Arg Tyr Leu Ala Met Lys Glu Asp Gly Arg Leu Leu Ala Ser Lys Cys
85 90 95

Val Thr Asp Glu Cys Phe Phe Phe Glu Arg Leu Glu Ser Asn Asn Tyr
100 105 110

Asn Thr Tyr Arg Ser Arg Lys Tyr Thr Ser Trp Tyr Val Ala Leu Lys
115 120 125

Arg Thr Gly Gln Tyr Lys Leu Gly Ser Lys Thr Gly Pro Gly Gln Lys
130 135 140

Ala Ile Leu Phe Leu Pro Met Ser Ala Lys Ser
145 150 155

<210> 71
<211> 6757
<212> DNA
<213> Homo sapiens

<400> 71
cggccccaga aaacccgagc gagtaggggg cggcgcgcag gagggaggag aactgggggc 60

gcgggaggct ggtgggtgtc gggggtggag atgtagaaga tgtgacgccg cggcccggcg 120

ggtgccagat tagcggacgg ctgcccgcgg ttgcaacggg atcccgggcg ctgcagcttg 180

ggaggcggct ctccccaggc ggcgtccgcg gagacaccca tccgtgaacc ccaggtcccg 240

ggccgccggc tcgccgcgca ccaggggccg gcggacagaa gagcggccga gcggctcgag 300

gctgggggac cgcgggcgcg gccgcgcgct gccgggcggg aggctggggg gccggggccg 360

gggccgtgcc ccggagcggg tcggaggccg gggccggggc cgggggacgg cggctccccg 420

cgcggctcca gcggctcggg gatcccggcc gggccccgca gggaccatgg cagccgggag 480

catcaccacg ctgcccgcct tgcccgagga tggcggcagc ggcgccttcc cgcccggcca 540

cttcaaggac cccaagcggc tgtactgcaa aaacgggggc ttcttcctgc gcatccaccc 600

cgacggccga gttgacgggg tccgggagaa gagcgaccct cacatcaagc tacaacttca 660

agcagaagag agaggagttg tgtctatcaa aggagtgtgt gctaaccgtt acctggctat 720

gaaggaagat ggaagattac tggcttctaa atgtgttacg gatgagtgtt tctttttga 780

acgattggaa tctaataact acaatactta ccggtcaagg aaatacacca gttggtatgt 840

ggcactgaaa cgaactgggc agtataaact tggatccaaa acaggacctg ggcagaaagc 900

tatacttttt cttccaatgt ctgctaagag ctgattttaa tggccacatc taatctcatt 960

tcacatgaaa gaagaagtat attttagaaa tttgttaatg agagtaaaag aaaataaatg 1020

tgtatagctc agtttggata attggtcaaa caatttttta tccagtagta aaatatgtaa 1080

ccattgtccc agtaaagaaa aataacaaaa gttgtaaaat gtatattctc ccttttatat 1140

tgcatctgct gttacccagt gaagcttacc tagagcaatg atctttttca cgcatttgct 1200

ttattcgaaa agaggctttt aaaatgtgca tgtttagaaa caaaatttct tcatggaaat 1260

catatacatt agaaaatcac agtcagatgt ttaatcaatc caaaatgtcc actatttctt 1320

atgtcatteg ttagtctaca tgtttctaaa catataaatg tgaatttaat caattccttt 1380
catagtttta taattctctg gcagttcctt atgatagagt ttataaaaca gtcctgtgta 1440
aactgctgga agttcttcca cagtcaggtc aattttgtca aacccttctc tgtacccata 1500
cagcagcagc ctagcaactc tgctggtgat gggagttgta ttttcagtct tcgccaggtc 1560
attgagatcc atccactcac atcttaagca ttcttcctgg caaaaattta tggtgaatga 1620
atatggcttt aggcggcaga tgatatacat atctgacttc ccaaaagctc caggatttgt 1680
gtgctgttgc cgaatactca ggacggacct gaattctgat tttataccag tctcttcaaa 1740
aacttctcga accgctgtgt ctcctacgta aaaaaagaga tgtacaaatc aataataatt 1800
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<210> 72
<211> 513
<212> PRT
<213> Homo sapiens

<400> 72

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Thr Leu Tyr Leu Leu Phe Gly Ala Trp Ala Gly Val Leu Gly Thr Ala
20 25 30

Leu Ser Leu Leu Ile Arg Ala Glu Leu Gly Gln Pro Gly Asn Leu Leu
35 40 45

Gly Asn Asp His Ile Tyr Asn Val Ile Val Thr Ala His Ala Phe Val
50 55 60

Met Ile Phe Phe Met Val Met Pro Ile Met Ile Gly Gly Phe Gly Asn
65 70 75 80

Trp Leu Val Pro Leu Met Ile Gly Ala Pro Asp Met Ala Phe Pro Arg
85 90 95

Met Asn Asn Met Ser Phe Trp Leu Leu Pro Pro Ser Leu Leu Leu Leu
100 105 110

Leu Ala Ser Ala Met Val Glu Ala Gly Ala Gly Thr Gly Trp Thr Val
115 120 125

Tyr Pro Pro Leu Ala Gly Asn Tyr Ser His Pro Gly Ala Ser Val Asp
130 135 140

Leu Thr Ile Phe Ser Leu His Leu Ala Gly Val Ser Ser Ile Leu Gly
145 150 155 160

Ala Ile Asn Phe Ile Thr Thr Ile Ile Asn Met Lys Pro Pro Ala Met
165 170 175

Thr Gln Tyr Gln Thr Pro Leu Phe Val Trp Ser Val Leu Ile Thr Ala
180 185 190

Val Leu Leu Leu Leu Ser Leu Pro Val Leu Ala Ala Gly Ile Thr Met
195 200 205

Leu Leu Thr Asp Arg Asn Leu Asn Thr Thr Phe Phe Asp Pro Ala Gly
210 215 220

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Gly Gly Asp Pro Ile Leu Tyr Gln His Leu Phe Trp Phe Phe Gly His
225                 230                 235                 240

Pro Glu Val Tyr Ile Leu Ile Leu Pro Gly Phe Gly Met Ile Ser His
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Ile Val Thr Tyr Tyr Ser Gly Lys Lys Glu Pro Phe Gly Tyr Met Gly
            260                 265                 270

Met Val Trp Ala Met Met Ser Ile Gly Phe Leu Gly Phe Ile Val Trp
        275                 280                 285

Ala His His Met Phe Thr Val Gly Met Asp Val Asp Thr Arg Ala Tyr
    290                 295                 300

Phe Thr Ser Ala Thr Met Ile Ile Ala Ile Pro Thr Gly Val Lys Val
305                 310                 315                 320

Phe Ser Trp Leu Ala Thr Leu His Gly Ser Asn Met Lys Trp Ser Ala
                325                 330                 335

Ala Val Leu Trp Ala Leu Gly Phe Ile Phe Leu Phe Thr Val Gly Gly
            340                 345                 350

Leu Thr Gly Ile Val Leu Ala Asn Ser Ser Leu Asp Ile Val Leu His
        355                 360                 365

Asp Thr Tyr Tyr Val Val Ala His Phe His Tyr Val Leu Ser Met Gly
    370                 375                 380

Ala Val Phe Ala Ile Met Gly Gly Phe Ile His Trp Phe Pro Leu Phe
385                 390                 395                 400

Ser Gly Tyr Thr Leu Asp Gln Thr Tyr Ala Lys Ile His Phe Thr Ile
                405                 410                 415

Met Phe Ile Gly Val Asn Leu Thr Phe Phe Pro Gln His Phe Leu Gly
            420                 425                 430

Leu Ser Gly Met Pro Arg Arg Tyr Ser Asp Tyr Pro Asp Ala Tyr Thr
        435                 440                 445

Thr Trp Asn Ile Leu Ser Ser Val Gly Ser Phe Ile Ser Leu Thr Ala
    450                 455                 460

Val Met Leu Met Ile Phe Met Ile Trp Glu Ala Phe Ala Ser Lys Arg
465                 470                 475                 480
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Lys Val Leu Met Val Glu Glu Pro Ser Met Asn Leu Glu Trp Leu Tyr
485 490 495

Gly Cys Pro Pro Pro Tyr His Thr Phe Glu Glu Pro Val Tyr Met Lys
500 505 510

Ser

<210> 73
<211> 1542
<212> DNA
<213> Homo sapiens

<400> 73
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ctgggccagc caggcaacct tctaggtaac gaccacatct acaacgttat cgtcacagcc 180

catgcatttg taataatctt cttcatagta atacccatca taatcggagg ctttggcaac 240

tgactagttc ccctaataat cggtgccccc gatatggcgt ttccccgcat aaacaacata 300

agcttctgac tcttacctcc ctctctccta ctcctgctcg catctgctat agtggaggcc 360

ggagcaggaa caggttgaac agtctaccct cccttagcag ggaactactc ccaccctgga 420

gcctccgtag acctaaccat cttctcctta cacctagcag gtgtctcctc tatcttaggg 480

gccatcaatt tcatcacaac aattatcaat ataaaacccc ctgccataac ccaataccaa 540

acgcccctct tcgtctgatc cgtcctaatc acagcagtcc tacttctcct atctctccca 600

gtcctagctg ctggcatcac tatactacta acagaccgca acctcaacac caccttcttc 660

gaccccgccg gaggaggaga ccccattcta taccaacacc tattctgatt tttcggtcac 720

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tcatcactag acatcgtact acacgacacg tactacgttg tagctcactt ccactatgtc 1140

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ccctaccaca cattcgaaga acccgtatac ataaaatcta ga 1542

<210> 74
<211> 219
<212> PRT
<213> Homo sapiens

<400> 74

Met Ser Ser His Leu Val Glu Pro Pro Pro Leu His Asn Asn Asn
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Asn Asn Cys Glu Glu Asn Glu Gln Ser Leu Pro Pro Pro Ala Gly Leu
20 25 30

Asn Ser Ser Trp Val Glu Leu Pro Met Asn Ser Ser Asn Gly Asn Asp
35 40 45

Asn Gly Asn Gly Lys Asn Gly Gly Leu Glu His Val Pro Ser Ser Ser
50 55 60

Ser Ile His Asn Gly Asp Met Glu Lys Ile Leu Leu Asp Ala Gln His
65 70 75 80

Glu Ser Gly Gln Ser Ser Ser Arg Gly Ser Ser His Cys Asp Ser Pro
85 90 95

Ser Pro Gln Glu Asp Gly Gln Ile Met Phe Asp Val Glu Met His Thr
100 105 110

Ser Arg Asp His Ser Ser Gln Ser Glu Glu Glu Val Val Glu Gly Glu
115 120 125

Lys Glu Val Glu Ala Leu Lys Lys Ser Ala Asp Trp Val Ser Asp Trp
130 135 140

Ser Ser Arg Pro Glu Asn Ile Pro Pro Lys Glu Phe His Phe Arg His
145 150 155 160

Pro Lys Arg Ser Val Ser Leu Ser Met Arg Lys Ser Gly Ala Met Lys
165 170 175

Lys Gly Gly Ile Phe Ser Ala Glu Phe Leu Lys Val Phe Ile Pro Ser
180 185 190

Leu Phe Leu Ser His Val Leu Ala Leu Gly Leu Gly Ile Tyr Ile Gly
195 200 205

Lys Arg Leu Ser Thr Pro Ser Ala Ser Thr Tyr
210 215

<210> 75
<211> 660
<212> DNA
<213> Homo sapiens

<400> 75
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atgaacagca gcaatggcaa tgataatggc aatgggaaaa atgggggget ggaacacgta 180

ccatcctcat cctccatcca caatggagac atggagaaga ttcttttgga tgcacaacat 240

gaatcaggac agagtagttc cagaggcagt tctcactgtg acagcccttc gccacaagaa 300

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<210> 76
<211> 194
<212> PRT
<213> Homo sapiens

<400> 76

Met Ser Gln Asn Gly Ala Pro Gly Met Gln Glu Glu Ser Leu Gln Gly
1 5 10 15

Ser Trp Val Glu Leu His Phe Ser Asn Asn Gly Asn Gly Gly Ser Val
20 25 30

Pro Ala Ser Val Ser Ile Tyr Asn Gly Asp Met Glu Lys Ile Leu Leu
35 40 45

Asp Ala Gln His Glu Ser Gly Arg Ser Ser Ser Lys Ser Ser His Cys
50 55 60

Asp Ser Pro Pro Arg Ser Gln Thr Pro Gln Asp Thr Asn Arg Ala Ser
65 70 75 80

Glu Thr Asp Thr His Ser Ile Gly Glu Lys Asn Ser Ser Gln Ser Glu
85 90 95

Glu Asp Asp Ile Glu Arg Arg Lys Glu Val Glu Ser Ile Leu Lys Lys
100 105 110

Asn Ser Asp Trp Ile Trp Asp Trp Ser Ser Arg Pro Glu Asn Ile Pro
115 120 125

Pro Lys Glu Phe Leu Phe Lys His Pro Lys Arg Thr Ala Thr Leu Ser
130 135 140

Met Arg Asn Thr Ser Val Met Lys Lys Gly Gly Ile Phe Ser Ala Glu
145 150 155 160

Phe Leu Lys Val Phe Leu Pro Ser Leu Leu Leu Ser His Leu Leu Ala
165 170 175

Ile Gly Leu Gly Ile Tyr Ile Gly Arg Arg Leu Thr Thr Ser Thr Ser
180 185 190

Thr Phe

<210> 77
<211> 585
<212> DNA
<213> Homo sapiens

<400> 77
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ggagacatgg aaaaaatact gctggacgca cagcatgagt ctggacggag tagctccaag 180

agctctcact gtgacagccc acctcgctcg cagacaccac aagataccaa cagggcttct 240

gaaacagata cccatagcat tggagagaaa aacagctcac agtctgagga agatgatatt 300

gaaagaagga aagaagttga aagcatcttg aagaaaaact cagattggat atgggattgg 360

tcaagtcggc cggaaaatat tccccccaag gagttcctct ttaaacaccc gaagcgcacg 420

gccaccctca gcatgaggaa cacgagcgtc atgaagaaag ggggcatatt ctctgcagaa 480

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atctatattg gaaggcgtct gacaacctcc accagcacct tttga 585

<210> 78
<211> 219
<212> PRT
<213> Homo sapiens

<400> 78

Met Glu Tyr Leu Ser Ala Leu Asn Pro Ser Asp Leu Leu Arg Ser Val
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Ser Asn Ile Ser Ser Glu Phe Gly Arg Arg Val Trp Thr Ser Ala Pro
20 25 30

Pro Pro Gln Arg Pro Phe Arg Val Cys Asp His Lys Arg Thr Ile Arg
35 40 45

Lys Gly Leu Thr Ala Ala Thr Arg Gln Glu Leu Leu Ala Lys Ala Leu
50 55 60

Glu Thr Leu Leu Leu Asn Gly Val Leu Thr Leu Val Leu Glu Glu Asp
65 70 75 80

Gly Thr Ala Val Asp Ser Glu Asp Phe Phe Gln Leu Leu Glu Asp Asp
85 90 95

Thr Cys Leu Met Val Leu Gln Ser Gly Gln Ser Trp Ser Pro Thr Arg
100 105 110

Ser Gly Val Leu Ser Tyr Gly Leu Gly Arg Glu Arg Pro Lys His Ser
115 120 125

Lys Asp Ile Ala Arg Phe Thr Phe Asp Val Tyr Lys Gln Asn Pro Arg
130 135 140

Asp Leu Phe Gly Ser Leu Asn Val Lys Ala Thr Phe Tyr Gly Leu Tyr
145 150 155 160

Ser Met Ser Cys Asp Phe Gln Gly Leu Gly Pro Lys Lys Val Leu Arg
165 170 175

Glu Leu Leu Arg Trp Thr Ser Thr Leu Leu Gln Gly Leu Gly His Met
180 185 190

Leu Leu Gly Ile Ser Ser Thr Leu Arg His Ala Val Glu Gly Ala Glu
195 200 205

Gln Trp Gln Gln Lys Gly Arg Leu His Ser Tyr
210 215

<210> 79
<211> 660
<212> DNA
<213> Homo sapiens

<400> 79
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tgtgatcaca agcggaccat ccggaaaggc ctgacagctg ccacccgcca ggagctgcta 180

gccaaagcat tggagaccct actgctgaat ggagtgctaa ccctggtgct agaggaggat 240

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gtgttgcagt ctggtcagag ctggagccct acaaggagtg gagtgctgtc atatggcctg 360

ggacgggaga ggcccaagca cagcaaggac atcgcccgat tcacctttga cgtgtacaag 420

caaaaccctc gagacctctt tggcagcctg aatgtcaaag ccacattcta cgggctctac 480

tctatgagtt gtgactttca aggacttggc ccaaagaaag tactcaggga gctccttcgt 540

tggacctcca cactgctgca aggcctgggc catatgttgc tgggaatttc ctccaccctt 600

cgtcatgcag tggaggggggc tgagcagtgg cagcagaagg gccgcctcca ttcctactaa 660

<210> 80
<211> 242
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 80

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1 5 10 15

Ser Leu Ser Ile Thr Cys Thr Val Ser Gly Leu Ser Leu Ile Asn Tyr
20 25 30

Gly Val His Trp Val Arg Gln Ser Pro Gly Lys Gly Leu Glu Trp Leu
35 40 45

Gly Val Ile Trp Ser Gly Gly Ser Thr Asp Tyr Asn Ala Ala Phe Ile
50 55 60

Ser Arg Leu Ser Ile Ser Lys Asp Asn Ser Lys Ser Gln Val Phe Phe
65 70 75 80

Lys Met Asn Ser Leu Gln Gly Asn Asp Thr Ala Ile Tyr Tyr Cys Ala
85 90 95

Arg Asn Ser Glu Leu Gly Ala Met Asp Tyr Trp Ala Gln Gly Ile Ser
100 105 110

Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly
115 120 125

Gly Gly Gly Ser Asp Ile Val Leu Thr Gln Ser Pro Ala Ser Leu Ala
130 135 140

Val Ser Leu Gly Gln Arg Ala Thr Ile Ser Cys Arg Ala Ser Lys Ser
145 150 155 160

Val Ser Thr Ser Gly Tyr Ser Tyr Met His Trp Asn Gln Gln Lys Pro
165 170 175

Gly Gln Pro Pro Arg Leu Leu Ile Tyr Leu Val Ser Asn Leu Glu Ser
180 185 190

Gly Val Pro Ala Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr
195 200 205

Leu Asn Ile His Pro Val Glu Glu Glu Asp Ala Ala Thr Tyr Tyr Cys
210 215 220

Gln His Ile Arg Glu Ala Tyr Thr Phe Gly Gly Gly Thr Lys Leu Glu
225 230 235 240

Ile Lys

<210> 81
<211> 756
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 81
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ccagagcctg agcattacct gcaccgtgag cggcctgagc ctgattaact atggcgtgca 120

ttgggtgcgt cagagcccgg gcaaaggcct ggaatggctg ggcgtgattt ggagcggcgg 180

cagcaccgat tataacgcgg cgtttattag ccgtctgagc attagcaaag ataacagcaa 240

aagccaggtg ttttttaaaa tgaacagcct gcagggcaac gataccgcga tttattattg 300

cgcgcgtaac agcgaactgg gcgcgatgga ttattgggcg cagggcatta gcgtgaccgt 360

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